
Columbia
University
Bulletin

School of
Public Health
1987-89



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A Letter from the Dean

The School of Public Health is an exciting community—a small graduate school where students, faculty, and staff are working together on the major health issues of the day. Our New York City setting provides both a wide range of truly complex public health and social challenges and the world's most comprehensive network of private and public health care and social services.

This is an exciting, challenging, and difficult time for the health care field both in the United States and abroad. More than ever, well-trained professionals are needed. In addition to an on-going program, new initiatives are being developed in areas such as health policy, health services research, environmental risk assessment, geriatrics, and international health and population programming. Key issues, including AIDS, health care financing, health care for the

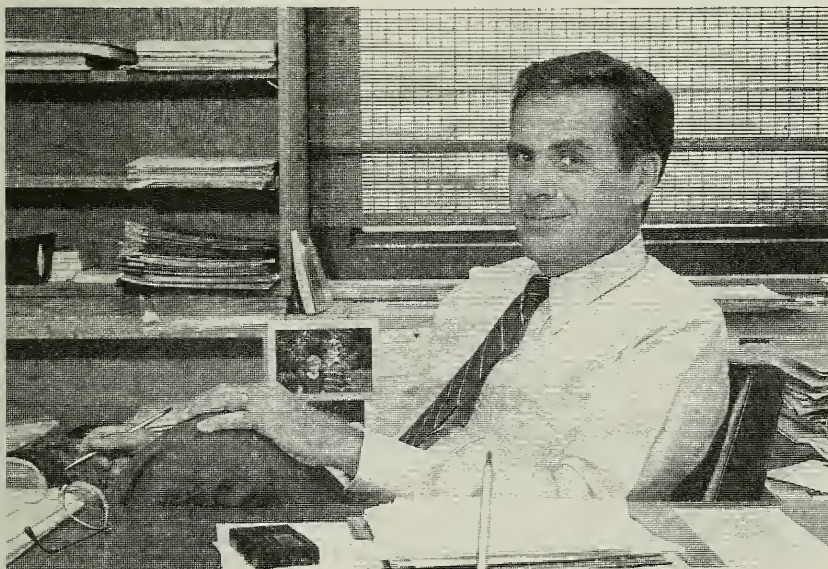
homeless, indigent and uninsured, adolescent pregnancy, and infant and maternal mortality in the developing world are among the many concerns of faculty and the School.

Our commitment to flexibility in the learning process permits students and faculty from many disciplines and backgrounds to find new perspectives and approaches to critical issues in public health.

The teaching, research, and service activities are outlined in the bulletin. While interviews are not required, we encourage you to call or visit the school to explore the opportunities in more depth with our Student Affairs Office and/or with faculty in the various divisions.

With best wishes,

Allan Rosenfield, M.D.
Dean



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Associate Professor of Clinical Public Health

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M.D., M.P.H.

Yehudi M. Felman

M.D., M.A., M.Phil.

Andrew C. Fleck, Jr.

M.D., M.P.H., L.L.B.,
J.D.

Raymond Fleishman

M.S.

Thomas J. Foley M.S.	Janet M. Nakushian R.N., M.A.
Nicholas Freudenberg B.S., M.P.H., Dr.P.H.	Donna O'Hare M.D.
Bernard Fuss M.A., M.S.	Clarence E. Pearson B.S., M.S.
Gary Gambuti B.S., M.P.A.	Peter M. Raith M.A.
Margaret M. Griesmer B.S.	Peter Rogatz M.D., M.P.H.
Margaret T. Grossi M.D., M.P.H.	Edward J. Rosasco, Jr. B.S., M.B.A.
Anne C. Hargreaves R.N., B.S., M.S.	Alan H. Rosenblut B.S., M.S., M.B.A.
David Harris M.D., M.P.H.	Rachel Rotkovitch R.N., B.S., M.S., Ph.D.
Cathy M. Idema R.N., B.S., M.P.H.	Harvey Schoenfeld B.A., M.B.A., M.S.
Pascal J. Imperato B.S., M.D., M.P.H., T.M.	Sherry Shamansky R.N., Ph.D.
Florence Kavalier M.D., M.S., M.P.H.	Alvin H. Strelnick M.D.
Stuart M. Lane M.S., Ph.D.	Instructors
David E. Leach III J.D.	Michael Goldfarb B.A., M.S.
Jacob J. Lindenthal Ph.D., Dr.P.H.	Ruth Haase B.S., M.A.
Regina Loewenstein M.A.	Joseph B. Stamm M.P.A.
Vivian E. Lubin M.P.H., M.B.A.	Lin H. Mo B.A., M.P.H., M.B.A.
Elaine Lugovoy R.N., M.A.	Associates
Robert Markowitz M.S.	Robert Malcolm Carr M.B.A.
Lawrence E. McDevitt B.A.	Michael S. Fassler M.P.H.
Charles H. Meyer M.S.	Deborah E. Halper M.P.H., M.S.U.P.
Penelope F. Murphy M.S.	Norma Shaw Hogan M.S.U.P.
Anthony C. Mustalish M.D.	Anne B. Jacobs M.S.U.P., M.P.H.

Dena J. Seiden
B.A.

Marc S. Wolfert
M.P.H.

Ilise A. Zimmerman
M.P.H., M.S.U.P.

POPULATION AND FAMILY HEALTH

Professor

Allan Rosenfeld
(Division Head)
B.A., Harvard, 1955;
M.D., Columbia, 1959

Professors of Clinical Public Health

Nicholas Cunningham
B.A., Harvard, 1950;
M.D., Johns Hopkins,
1955; Dr.P.H., 1977

Stephen L. Isaacs
B.A., Brown, 1961; J.D.,
Columbia, 1965

John A. Ross
B.A., Ottawa, 1956; M.A.,
Yale, 1957; Ph.D., 1961

Giorgio R. Solimano
B.S., Chile, 1952; M.D.,
1960

Joe D. Wray
B.A., Stanford, 1947;
M.D., 1952; M.P.H.,
North Carolina (Chapel
Hill), 1967

Clinical Professor

Martin E. Gorosh
B.A., Brooklyn, 1959;
M.P.H., Johns Hopkins,
1969; Dr.P.H., 1973

Adjunct Professor

Joy G. Dryfoos
B.A., Antioch, 1951;
M.A., Sarah Lawrence,
1966

Associate Professor

Andrew R. Davidson
B.A., Sterling, 1969; M.A.,
Illinois, 1971; Ph.D., 1974

**Associate Professors
of Clinical Public
Health**

Katherine F. Darabi
B.A., Syracuse, 1969;
M.S., Columbia, 1975;
M.Phil., 1977; Ph.D.,
1980

Pearila Namerow
B.A., Pennsylvania, 1970;
M.Phil., Columbia, 1974;
Ph.D., 1976

**Associate Clinical
Professors**

**Rosemary
Barber-Madden**
B.A., Jersey City State,
1968; M.S. Hunter, 1977;
Ed.D., Temple, 1980

Audrey Tittle Cross
B.S., California (Berkeley),
1967; M.P.H., 1969; J.D.,
California (Hasting),
1978; Ph.D., California
(Berkeley), 1985

Judith E. Jones
B.A., Hunter, 1956; M.S.,
Columbia, 1983

William A. Van Wie
B.A., Wooster, 1961;
B.D., Pittsburgh Seminary,
1964; M.P.H., North
Carolina (Chapel Hill),
1968; Dr.P.H., 1974

**Adjunct Associate
Professor**

Susan G. Philliber
B.A., Florida State, 1965;
M.S., 1966; Ph.D., 1968

Assistant Professors

Debra Kalmuss
B.A., State University of
New York (Buffalo), 1973;
M.S.W., Bryn Mawr,
1976; M.A., Michigan,
1977; Ph.D., 1980

Sally A. Lederman
B.S., Brooklyn, 1957;
M.S., Columbia, 1976;
M.Phil., 1979; Ph.D.,
1980

Virginia A. Rauh
B.A., Middlebury, 1969;
M.S.W., Smith, 1971;
Sc.D., Harvard, 1982

**Assistant Professors of
Clinical Public Health**

Ann M. Kimball
B.S., Stanford, 1972;
M.D., Washington, 1976;
M.P.H., 1981

Norman L. Weatherby
B.A., North Texas State,
1974; M.A., 1978; Ph.D.,
Florida State, 1983

**Assistant Clinical
Professors**

Nancy E. Jones
B.S.N., Columbia, 1969;
M.P.H., 1975; Dr.P.H.,
1986

James A. Lipton
D.D.S., Columbia, 1971;
M. Phil., 1974; Ph.D.,
1980

Susan Nalder
B.S., Washington (Seattle),
1965; M.P.H., Johns
Hopkins, 1970

Mark S. Rapaport
B.A., M.D., Boston, 1970;
M.P.H., Harvard, 1973

Linda A. Randolph
B.S., Howard, 1962;
M.P.H., California
(Berkeley), 1971

Maria J. Wawer
B.S., New Brunswick
(Fredericton), 1974; M.D.,
McMaster (Hamilton,
Ontario), 1977; M.H.Sc.,
Toronto, 1980

**Adjunct Assistant
Professors**

Kirsten Bradstock
B.S., George Mason, 1977;
M.D., Virginia, 1981;
M.P.H., Johns Hopkins,
1983

Catherine Cowell
B.S., Hampton Institute,
1945; M.S., Connecticut,
1947

Michelle G. Shedlin
B.S., Columbia, 1968;
M.A., 1975; M.Phil.,
Ph.D., 1982

**Adjunct Assistant
Professors of Clinical
Public Health**

Wendy Chavkin
B.A., Michigan, 1973;
M.D., State University of
New York (Stony Brook),
1978; M.P.H., Columbia,
1980

Rebecca J. Cook
B.A., Columbia, 1970;
M.A., Tufts, 1972;
M.P.A., Harvard, 1973;
J.D., Georgetown, 1982

**Associate Research
Scientists**

Abdul Aziz Farah
B.S., Khartoum, 1969;
M.Phil., Cairo
Demographic Centre,
1975; M.A., Pennsylvania,
1978; Ph.D., 1981

Robert Futterman
B.A., Brooklyn, 1975;
M.A., Michigan, 1977;
Ph.D., 1980

Donald J. Lauro
B.A., California (Berkeley),
1966; M.A., 1971; Ph.D.,
Australian National
(Canberra), 1980

Regina McNamara
B.A., St. Elizabeth, 1950;
M.S.S.W., Fordham, 1964;
M.P.H., Columbia, 1978;
Dr.P.H., 1985

Stanley Musgrave
B.A., Haverford, 1977;
M.D., Rochester, 1981;
M.P.H., North Carolina
(Chapel Hill), 1985

Eugene M. Weiss
B.A., California (Berkeley),
1963; M.P.H., 1965;
Ph.D., Michigan, 1972

Lecturers

Roy E. Brown
M.D.

Dennis Carlson
M.D.

Morton Lebow
M.A.

Jean Pakter
M.D., M.P.H.

Victor Penchaszadeh
M.D.

Adjunct Lecturer

Elizabeth Bernardik
Ph.D.

SOCIOMEDICAL SCIENCES

Professors

Denise B. Kandel
(in Psychiatry) B.A., Bryn
Mawr, 1952; M.A.,
Columbia, 1953; Ph.D.,
1960

Eugene Litwak
(Division Head) B.A.,
Wayne State, 1948; Ph.D.,
Columbia, 1958

Seymour Spilerman
(Julian C. Levi Professor of
Social Sciences) B.A.,
Pomona, 1959; M.A.,
Brandeis, 1961; Ph.D.,
Johns Hopkins, 1968

Clinical Professor

Joseph Marbach
B.A., Drew, 1956; D.D.S.,
Pennsylvania, 1960

Senior Research Scientist

Ann F. Brunswick
B.A., Hunter, 1946; M.A.,
Clark, 1947; Ph.D.,
Columbia, 1976

Associate Professor

John L. Colombotos
B.A., Columbia, 1949;
M.A., 1952; Ph.D.,
Michigan, 1961

Associate Professor of Clinical Public Health

John P. Allegrante
B.S., State University of
New York (Cortland),
1974; B.S., Illinois
(Urbana-Champaign),
1976; Ph.D., 1979

Associate Clinical Professor

Carol Caton
B.S., Columbia, 1962;
M.S.N., Yale, 1965;
M.Phil., 1967; Ph.D.,
Michigan, 1969

Research Scientist

Mata K. Nikias
D.D.S., Athens, 1953;
M.P.H., Columbia, 1960;
Ph.D., 1967

Assistant Professors

Mary Elizabeth Crandon
(Anthropology) B.A.,
Elmira, 1971; M.A.,
Massachusetts, 1973;
Ph.D., 1980

Mary Clare Lennon
B.A., Fordham, 1970;
M.A., Columbia, 1975;
Ph.D., 1980; M.S., 1985

John L. Martin
B.A., California, 1974;
Ph.D., City University
(New York), 1982;
M.P.H., Columbia, 1984

Peter M. Messeri
B.S., Massachusetts
Institute of Technology,
1972; M.A., Columbia,
1976; Ph.D., 1985

Assistant Clinical Professors

James A. Lipton
B.S., City College (New
York), 1967; D.D.S.,
Columbia, 1971; Ph.D.,
1980

John R. Varoscak
B.S., Fairleigh Dickinson,
1966; D.D.S., 1969

Adjunct Assistant Professors

Judith Barr
B.A., Goucher, 1957;
Sc.D., Johns Hopkins,
1976

Kirsten Bradstock
B.S., George Mason, 1977;
M.D., Virginia, 1981;
M.P.H., Johns Hopkins,
1983

Margery Braren
M.A., Columbia, 1963;
Ph.D., 1971

Ann Partridge Dill
B.A., Delaware, 1970;
M.A., Columbia, 1975;
M.Phil., 1980; Ph.D.,
1986

Sally Guttmacher

B.S., Wisconsin, 1963;
M.Phil., Columbia, 1973;
Ph.D., 1976

Lawrence Krasnoff

B.A., City College (New
York), 1969; Ph.D., 1979;
M.S., Columbia, 1981

Betty W. Levin

B.A., Barnard, 1969;
M.A., Columbia, 1977; M.
Phil., 1980; Ph.D., 1985

Debra Murphy

B.S., New Mexico, 1975;
M.S., Texas Christian,
1981; Ph.D., 1983

Matthew A. Rosen

B.A., Columbia, 1967;
M.A., 1969; M.Phil.,
1975; Ph.D., 1979

Special Lecturer**Jack Elinson**

B.S., City College (New
York), 1937; M.A., George
Washington University,
1946; Ph.D., 1954

**Associate Research
Scientists****Stanley Fisher**

B.S., College of the City of
New York, 1949; M.S.W.,
Columbia, 1955; Ph.D.,
City College (New York),
1977

Carole S. Vance

B.A., Hunter, 1968;
Ph.D., Columbia, 1979

C. Noemi Velez

B.A., Puerto Rico, 1970;
M.A., 1973; M.Phil.,
Columbia, 1978; Ph.D.,
1981

**Adjunct Associate
Research Scientists****Norma J. Agatstein**

B.A., Hunter, 1971; M.A.,
New York University,
1973; Ph.D., Columbia,
1985

Paul E. Robinson

B.A., Ramapo College of
New Jersey, 1977; M.A.,
New York University,
1980; Ph.D., 1984

**Senior Research
Associate****Paul S. Haberman**

B.S., Pennsylvania, 1948;
M.B.A., New York
University, 1961

Research Associate**Athilia E. Siegmann**

B.S., Queens (New York),
1944; M.A., Columbia,
1947; M.S., 1965; M.Phil.,
1974

Instructors**Donald H. Gemson**

Ph.D., M.P.H.

Rochelle Kern

Ph.D., M.P.H.

Lecturers**Raymond Fink**

Ph.D.

Andrew Gordon

Ph.D., M.P.H.

Corinne Kirchner

B.A., M.Phil.

William H. Redd

Ph.D.

Suzanne G. Rinaldo

Ph.D.

Lucille Rosenbluth

M.P.A.

TROPICAL MEDICINE**Professors****Dickson D. Despommier**

(Parasitology) (also
Microbiology)
B.S., Fairleigh Dickinson,
1962; M.S., Columbia,
1964; Ph.D., Notre Dame,
1967

Michael Katz

(also Pediatrics)
B.A., Pennsylvania, 1949;
M.D., State University of
New York (Downstate),
1956; M.S., Columbia,
1963

Associate Professor**Philip A. D'Alesandro**

(Acting Division Head)
(Parasitology) (also
Microbiology) B.S.,
Rutgers, 1952; M.S.,
1954; Ph.D., Chicago,
1958

**Adjunct Associate
Professor****John D. Frame**

B.A., Wheaton, 1938;
M.D., Northwestern, 1943

Assistant Professor**Deborah A. Russell**

B.A., Texas, 1972; M.S.,
Texas A & M, 1977;
D.V.M., 1980; Ph.D.,
Texas, 1983

**Assistant Clinical
Professor****Martin G. Blechman**

B.S., George Washington,
1949; M.S., Columbia,
1953; M.D., Jefferson,
1957

School of Public Health

The first three Schools of Public Health in the world were established by grants in 1919. One of these, the Columbia University School of Public Health, was the outgrowth of an early concern in the Faculty of Medicine with principles of the health of populations and the administrative sciences of health care. Plans for the School were discussed in a report to President Nicholas Murray Butler as early as 1909. The School has been in continuous operation and dedicated to these principles since its establishment.

The curriculum has continuously been examined and revised to fit changing public health priorities in the society. The changes in priorities have followed the scientific and technological advances that affect health. The concerns over the control of the purity of water and sanitation and waste disposal have shifted to the more current threats to the health of populations in industrialized societies. Some of these new threats include environmental contaminants, toxic chemicals, and carcinogens. Other concerns include occupational hazards and the use of epidemiology as a means of helping to discover the causes of chronic disease.

Health care for the elderly has become a priority for policymakers and health professionals alike. Responding to a growing need to provide a cadre of professional health care personnel trained in long-term care, the School of Public Health created a division of Geriatrics and Gerontology in 1985. The program provides students with the expertise and skills to address the complex issues in Geriatrics and Gerontology.

New preventive diagnostic and treatment measures are subjected to the techniques of biostatistics as part of the growth of the measures of ef-

fectiveness of modern medicine. Statistics are applied in experimentation of all kinds, in medicine, in evaluation, in the control of illness and the measurement of health. The influence of these techniques continues to expand the usefulness of modern health care.

The social sciences have proven useful disciplines in the study of the health of populations, and the first full-fledged program in sociomedical sciences research and training was developed in the Columbia University School of Public Health.

The shrinking world has made parasitic diseases a problem of many new populations. Tropical medicine has moved directly into immunological and microbiologic research in parasitic disease as a step toward understanding and controlling the problems of parasites.

Population and family health has expanded its focus on maternal and child health, as well as on population issues, as a response to the problems of families both here and abroad.

As one of the largest industries in the United States, health care represents over 11 percent of the gross national product. Effective use of these resources involves the need for management skills and research in personnel and economic issues. Health administrators continue to address these concerns as graduates of this institution's programs.

Because the principles of public health are applicable to a wide variety of professional disciplines, the student body reflects great diversity in previous training and experience. Recent major decisions concerning part-time attendance have greatly improved educational efforts by making it possible for well qualified health professionals to receive their academic credentials while continuing to

contribute in their professional roles. This has occurred largely through a new program of year-round evening courses, as well as expanded summer course offerings. Students continue to seek education at the School of Public Health from all areas of the United States and foreign countries on every continent.

The School has developed its joint degree programs with a view to strengthening its relationships with other schools of the University. Eight joint degree programs currently enroll students in a variety of the University's professional schools. The School has reached out to establish formal relationships with residency programs in preventive medicine in other metropolitan medical schools, and has taken measures to allow students in the health professions in other metropolitan universities to earn concurrent public health degrees.

Educational Programs

The School's educational programs undergo constant modifications. Careful study of existing health systems; the probable shape of a future system; and the preparation of students for required operational, research, and teaching activities continue in the forefront of educational planning. In particular, consideration is given to the system roles that need to be filled, the career decisions graduates need to make, and the group and personal relationships necessary to the task of problem solving. As a result of these considerations a number of carefully designed educational programs have been developed.

Current educational objectives emphasize the preparation of professionals for generalist and specialist roles in public health. The School administers three graduate degree programs (M.P.H., M.S., Dr.P.H.), and cooperates with other University units in programs leading to the Ph.D. degree

and a number of joint degrees (M.P.H./M.B.A., M.P.H./M.S. in urban planning, M.P.H./M.S. in social work, M.P.H./M.S. in nursing, M.P.H./M.S. in occupational therapy, M.P.H./M.D., M.P.H./D.D.S., M.P.H./M.I.A., M.P.H./M.P.A.). A school committee is reviewing the Dr.P.H. degree, giving consideration to developing a primarily professional doctoral program with an emphasis on practice rather than on a single research topic. Each of these degree programs, unique in its goals, academic criteria, content, and methods, is described in more detail elsewhere in this bulletin.

Among the overall educational objectives for all graduates of the School is the development of individual competence and improved skills, particularly in (a) recognizing and defining public health problems, setting priorities, and using scientific approaches to problem solving; (b) accumulating appropriate data information, analyzing and interpreting findings, and assessing relevance and validity; and (c) communicating effectively with colleagues and the different groups involved in delivering health services. To accomplish these objectives, students are encouraged to seek both general perspectives and in-depth experiences in their studies.

In all programs, students are urged to choose at least one area of concentration. In the M.S. and Dr.P.H. programs, specialization is expected. In the M.P.H. degree program, up to 50 percent of required course credits have a concentration focus. Current major areas of educational concentration or specialization, by divisional unit, are:

- biostatistics
- environmental sciences, including
 - occupational medicine and
 - environmental health
- epidemiology
- geriatrics and gerontology

health administration, including health policy, planning, services/facilities management, and evaluation
 population and family health, including maternal and child health, public health nutrition, and international health
 sociomedical sciences
 tropical medicine and parasitology

The School has an exceedingly well-qualified full-time faculty and an experienced part-time teaching staff composed of professionals and practitioners working in agencies and institutions in the New York metropolitan area. Their particular contribution is to relate classroom theory to the realities of practice. Educational resources are rich both within the University and in the metropolitan area. Experimentation with teaching methods is continuous, and use is made of combinations of approaches, including lectures, seminars, case studies, role-playing simulations, audiovisual aids, field experiences, and research.

Research Programs

Faculty in all divisions of the School are involved in research programs, many of which afford opportunities for student participation. Faculty involvement in research projects enriches classroom and tutorial experiences for students and contributes to the body of knowledge and to responsible decision-making on health issues.

Research activities at the School range from small studies by an individual faculty member to multidisciplinary programs encompassing several departments or research centers at both the Health Sciences and Morningside campuses. The general research objective of the School is to seek solutions to public health problems in the United States and abroad. Specific objectives flow from the School's geographical and institu-

tional context. The New York City region is highly urbanized, industrialized, and internationally oriented, with corresponding health concerns. The Columbia-Presbyterian Medical Center is among the world's foremost science and policy-setting medical institutions. In addition, research is encouraged because it provides an atmosphere conducive to scientific inquiry, new methodological approaches to public health problems, and development of public health leaders. It also provides a major source of financial support for the School and its students.

The Standing Committee on Research, which consists of faculty from each division and student representatives, provides a forum for the discussion of issues of interest to researchers.

Service Activities

The School is committed to a service role in which faculty and students, together with those they serve, share knowledge and skills in furthering community health objectives. The School also recognizes the educational value of service activities, many of which provide theoretical and practical applications for research. One example of such a service activity involves the School's Division of Population and Family Health. The service emphasizes reproductive health care for women, with an initial special priority for adolescent services. A young-adult clinic has been established, providing supportive reproductive health services to teenagers in the Washington Heights area of Manhattan. In conjunction with the Departments of Pediatrics and Obstetrics/Gynecology, a number of community responsive programs have been implemented. The entire service activity has built-in educational, evaluative, and research components.

Faculty and students are involved

in a wide range of domestic and international service activities. Currently most of these activities originate within the School's divisions, which provide technical assistance on request to government, private, and voluntary agencies; to community groups; and to professional colleagues. Also, individual faculty in all School divisions serve community interests in their professional capacities as members of advisory boards, editorial panels, study sections, peer review groups, task forces, and professional associations. Students and graduates extend the School's service influence by participating as colleagues in all areas of the health system. This commitment to service requires that the School and its faculty maintain constant communication with the main-streams of public health and related fields.

Disabled-Student Services

The Office of Disabled-Student Services, 204 Earl Hall, ensures that students with long-term or temporary disabilities have the opportunity to participate to the fullest extent possible in the activities and programs of the University. Staff members act as advocates, resource and referral agents, ombudsmen, and educators, while providing counseling and guidance. Strict confidentiality is maintained at all times. The services offered include: producing the *Access Columbia Handbook*, sponsoring support groups, coordinating volunteer and work-study students for assistance, developing workshops which bring together disabled and nondisabled students, faculty, and staff, and maintaining a resource collection containing various materials of interest to disabled students. This office also works with representatives from each school who act as liaisons on behalf of disabled students. Disabled students should first take any financial problems or questions to their

school representative. Ms. Patricia Thompson is the office coordinator.

This office is accessible to mobility-impaired students through the disabled-access entrance on the south side of Low Memorial Library on the main level of campus. Telephone (280-3574) in advance so someone may open the door.

Official Regulations

RESERVATION OF UNIVERSITY RIGHTS

This bulletin is intended for the guidance of persons applying for or considering application for admission to Columbia University and for the guidance of Columbia students and faculty. The bulletin sets forth in general the manner in which the University intends to proceed with respect to the matters set forth herein, but the University reserves the right to depart without notice from the terms of this bulletin. The bulletin is not intended to be and should not be regarded as a contract between the University and any student or other person.

UNIVERSITY REGULATIONS

According to University regulations, each person whose registration has been completed will be considered a student of the University during the term for which he or she is registered unless the student's connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which he or she is first registered.

The privileges of the University are not available to any student until he or she has completed registration. A student who is not officially registered for a University course may not attend the course unless granted auditing privileges (see Auditing Courses, above). No student may register after the stated period unless he or she obtains the written consent of the appropriate dean or director.

The University reserves the right to

withhold the privilege of registration or any other University privilege from any person with unpaid indebtedness to the University.

Attendance and Length of Residence

The minimum residence requirement for each Columbia degree is the equivalent of two terms of full-time course work (or 30 points) completed at Columbia University. A student who wishes to earn both a master's degree and a doctorate from Columbia should be aware that any advanced standing awarded for graduate work completed elsewhere will not reduce the minimum residence required for obtaining both degrees.

Students are held accountable for absences incurred because of late enrollment.

Leave of Absence

A student in good standing who must interrupt his or her studies may be granted a leave of absence for a stated period, usually not to exceed one year. Students must apply in writing to the Dean, stating the reason for and the period of the leave.

Religious Holidays

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the Academic Calendar. (See *Academic Calendar* for dates of religious holidays.)

Where scheduling conflicts prove

unavoidable, no student will be penalized for absence because of religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the Provost.

Honor Code

In 1978 the Public Health School Assembly adopted an honor code relating specifically to student/faculty responsibilities in assuring academic integrity. Copies of the honor code are distributed to students at the beginning of the academic year. Procedures for dealing with alleged infractions of the honor code have been developed and are available in the Dean's Office.

ACADEMIC DISCIPLINE

The continuance of each student upon the rolls of the University, the receipt of academic credits, graduation, and the conferring of any degree or the granting of any certificates are strictly subject to the disciplinary powers of the University.

RULES OF UNIVERSITY CONDUCT

The Rules of University Conduct (Chapter XLI of the Statutes of the University) provide special disciplinary rules applicable to demonstrations, rallies, picketing, and the circulation of petitions. These rules are designed to protect the rights of free expression through peaceful demonstration while at the same time ensuring the proper functioning of the University and the protection of the rights of those who may be affected by such demonstrations.

The Rules of University Conduct

are University-wide, and displace the normal disciplinary procedures of each School or Division ("Dean's discipline"), although a student who is charged with a violation of the Rules has the option of choosing Dean's discipline.

All University faculty, students, and staff are responsible for compliance with the Rules of University Conduct. Copies of the full text are available at the Office of the University Senate, 402 Low Memorial Library, at the Office of Student Information Services, 208 Philosophy, and at the Office of Student Activities, 206 Ferris Booth.

STATEMENT OF NONDISCRIMINATORY POLICIES

The University is required by certain Federal statutes and administrative regulations to publish the following statements:

Consistent with the requirements of Title IX of the Education Amendments of 1972, as amended, and Part 86 of 45 C.F.R., the University does not discriminate on the basis of sex in the conduct or operation of its education programs or activities (including employment therein and admission thereto). Inquiries concerning the application of Title IX and Part 86 of 45 C.F.R. may be referred to Ms. Rosalind S. Fink, the Director of the University's Office of Equal Opportunity and Affirmative Action (305 Low Memorial Library, New York, N.Y. 10027, telephone 212-280-5511), or to the Director, Office for Civil Rights (Region II), 26 Federal Plaza, New York, N.Y. 10007.

Columbia University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational policies, admissions policies, scholarship

and loan programs, and athletic and other University-administered programs.

Consistent with the requirements of Section 504 of the Rehabilitation Act of 1973, as amended, and Part 84 of 45 C.F.R., the University does not discriminate on the basis of handicap in admission or access to, or employment in, its programs and activities. Section 503 of the Rehabilitation Act of 1973 requires affirmative action to employ and advance in employment qualified handicapped workers.

The University in addition desires to call attention to other laws and regulations that protect employees, students, and applicants.

Title VI of the Civil Rights Act of 1964, as amended prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving Federal financial assistance. Title VII of the Civil Rights Act of 1964, as amended, prohibits employment discrimination because of race, color, religion, sex or national origin. Executive Order 11246, as amended, prohibits discrimination in employment because of race, color, religion, sex or national origin and requires affirmative action to ensure equality of opportunity in all aspects of employment. In addition, New York Human Rights Law, Article 15, Executive Law Section 296 prohibits discrimination in employment because of marital status.

The Equal Pay Act of 1963 prohibits discrimination on the basis of sex in rates of pay. The Age Discrimination in Employment Act of 1967, as amended, prohibits discrimination in employment on the basis of age.

The Columbia University Senate on December 1, 1978, passed a resolution announcing its general educational policy on discrimination which reaffirms the University's commitment to nondiscriminatory policies in the above-mentioned categories, as well as its policy not to discriminate on the basis of sexual orientation.

Section 402 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, prohibits job discrimination and requires affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era.

All employees, students, and applicants are protected from coercion, intimidation, interference or discrimination for filing a complaint or assisting in an investigation under any of the foregoing policies and laws.

The University's Office of Equal Opportunity and Affirmative Action has also been designated to coordinate the University's compliance activities under each of the programs referred to above. Any employee who believes that he or she has been denied equal opportunity should contact this office, which will investigate complaints and counsel employees on questions relating to equal opportunity and affirmative action.

DISCRIMINATION GRIEVANCE PROCEDURE

The University's Discrimination Grievance Procedure is available to enrolled students who feel that they have been the victims of sexual harassment or discrimination on the basis of race, religion, national or ethnic origin, sex, sexual orientation, marital status, age, handicap, or Vietnam Era or qualified special disabled veteran status. A copy of the Procedure is available in the Office of Equal Opportunity and Affirmative Action, 305 Low Memorial Library (280-5511).

A Complaint under this Procedure is initiated through completion of a Discrimination Complaint Form, also available in the Equal Opportunity Office. Staff in that Office will assist in completing the Form and also are available for confidential counseling and informal investigation of discrimination claims.

Protection Against Sexual Harassment

POLICY STATEMENT ON SEXUAL HARASSMENT

Federal Law [Title VII of the Civil Rights Act of 1964] provides that it shall be an unlawful discriminatory practice for any employer, because of the sex of any person, to discharge without just cause, to refuse to hire, or otherwise to discriminate against that person with respect to any matter directly or indirectly related to employment. Harassment of any employee on the basis of sex violates this federal law.

To help clarify what is unlawful sexual harassment the Federal Equal Employment Opportunity Commission has issued Guidelines on the subject. While the EEOC Guidelines apply only to faculty and other employees, the University prohibits sexual harassment of any member of the Columbia community, whether such harassment is aimed at students, faculty, or other employees, and violators will be subject to disciplinary action. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature will constitute sexual harassment when:

1. submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment;
2. submission to or rejection of such conduct by an individual is used as the basis for academic or employment decisions affecting that individual; or,
3. such conduct has the purpose or effect of unreasonably interfering with an individual's academic or work performance or creating an intimidating, hostile, or offensive academic or working environment.

Any person who believes that he or

she is being sexually harassed should seek a resolution of the problem through discussion with the person directly concerned. If this does not resolve the matter, or if there is a reluctance to deal directly with the person involved, the problem should then be brought to the attention of a member of the University Panel on Sexual Harassment. A list of current panelists is attached. Advice may also be sought from the Office of Equal Opportunity and Affirmative Action (305 Low Library; 280-5511). If these steps have not resolved the problem, the applicable University grievance procedure should be used, including the University Discrimination Grievance Procedure that is available if no other University grievance procedure is specifically applicable. No one at the University may retaliate in any way against a person who makes a claim of sexual harassment.

CHARGE OF THE UNIVERSITY PANEL ON SEXUAL HARASSMENT

The Columbia Panel on Sexual Harassment is composed of trusted, accessible, and sympathetic members of the University community who act as mediators. Their goal is the protection and counseling of any member of the University who is made to feel personally pressured or uncomfortable because of the behavior of another University member who is in a position of power. Members of the Panel provide a safe, impartial, non-adversarial setting in which the problem can be considered or solved, through confidential counseling and, when requested, mediation between the complainant and the alleged harasser. The Panel thus provides guidance and protection for the accused as

well, identifying false or mistaken accusations, misunderstandings, or unconscious behavior. Panel members finally become a link through which the University can take account of, and take appropriate action against, those on campus who are behaving illegally. The Panel on Sexual Harassment is thus a timely, protective, and compassionate arm of the University, one which not only sensitizes and educates the University community, but also demonstrates that University's commitment to fair treatment of all its members.

SEXUAL HARASSMENT COMPLAINT PROCEDURES

A. Going to a Panelist

1. A complainant comes to a Panel member with a complaint, to report an incident, or to seek advice.
2. The Panel member obtains data through discussion with the complainant, but keeps no records.
3. The Panel member selects one of the counseling or mediation options suggested by his or her training.
4. If the case seems serious enough, the Panel member refers it to the Equal Opportunity/Affirmative Action Office.

B. Initiating a Formal Investigation

1. A formal investigation may be initiated in either of the following ways:
 - a. A complainant files a formal grievance under the applicable University grievance procedure. This step may be taken at any time, either with or without consulting a Panel member.
 - b. A Panel member, believing that further action in a particular case might be appropriate, with the permission of the complainant, con-

sults with the director of the EOAA office and the General Counsel or their designees. Consultations among the Panel member, General Counsel, and EOAA office may also occur in a case of multiple complaints.

2. All investigatory or formal actions taken will be conducted by the University and not the Panel.

PANEL MEMBERSHIP LIST*

Morningside

PROFESSIONAL SCHOOLS

Harry Arouh
Graduate School of
Journalism
Lecturer
607 Journalism
280-3328

Ann Bartel
Graduate School of
Business
Professor
710 Uris
280-4419

Phyllis Dain
School of Library Service
Professor
611 Butler Library
280-4032

Samuel Miller
School of Social Work
Associate Professor
711 McVickar
280-2735

Elliott Sclar
Graduate School of
Architecture, Planning,
and Preservation
Professor
410 Avery
280-3513

Howard Stein
School of the Arts
Professor
605 Dodge
280-3408

*While Panelists are identified by location, school, or administrative area on this list, each of them is in fact available to any member of the Columbia community. Persons who feel uncomfortable speaking with "their" Panelist(s) are encouraged to seek out a Panelist from elsewhere at the University.

Malvin Teich
School of Engineering
and Applied Science
Professor
Electrical Engineering
 1332 Seeley W. Mudd
 280-3103, 3117

William Young
School of Law
Professor
 8W8 Law
 280-2645

ARTS AND SCIENCES

(Columbia College, Graduate School
 of Arts and Sciences, School of Gen-
 eral Studies, and School of Interna-
 tional and Public Affairs)

Eric Foner
Department of History
Professor
 620 Fayerweather, Box 16
 280-5253

Inge Halpert
Department of Germanic
Languages
Professor
 320 Hamilton
 280-3201, 4781

Thomas P. Bernstein
Department of Political
Science
Professor
 714 International Affairs
 280-3664

CENTRAL ADMINISTRATION

Mary Murphy
Deputy Vice President for
Student Services
 213 Low Library
 280-2857

Lamont-Doherty Geological Observatory

Constance Sancetta
Senior Research Scientist
 Core Lab, Room 204
 Palisades, N.Y. 10964
 914-359-2900, Ext. 412

Nevis Laboratories

Allan Sachs
Professor of Physics
 P.O. Box 137
 Irvington, N.Y. 10533
 914-591-8100, Ext. 213

University Libraries

Charling Fagan
Academic Information
Services Group
Acting Director
 317 Butler Library
 280-2245

Angela Giral
Librarian
 Avery Library
 280-3068

Health Sciences

Jeannette Coy
Harlem Hospital Center
Departmental
Administrator
 Obstetrics and Gynecology
 8111 King Pavilion
 491-3621

Marlene Klyvert
School of Dental and
Oral Surgery
Associate Professor
 Division of Dental
 Hygiene
 Box 20 Physicians and
 Surgeons
 630 West 168th Street
 305-8478

Eura Lennon
School of Nursing
Assistant Professor
 617 West 168th Street
 305-3198

Marion Murphy
Health Sciences
Administration
Departmental
Administrator
 Pediatrics
 Babies Hospital South
 1-104
 630 West 168th Street
 305-7175

Audrey Penn
**College of Physicians
and Surgeons**
Professor
Neurology Department
4-420
630 West 168th Street
305-3533

Virginia Rauh
School of Public Health
Assistant Professor
Center for Population and
Family Health
60 Haven Avenue, B-3
305-6960

Ethel Siris
**College of Physicians
and Surgeons**
*Associate Professor of
Clinical Medicine*
Department of Medicine
PH-124
622 West 168th Street
305-2529

Admission and Degree Requirements

An application, and recommendation forms are provided inside the back cover of this bulletin. Please complete and return all items specified on the check list shown in Application Procedures under Admission below.

The School of Public Health offers three programs leading, respectively, to the following degrees:

Master of Public Health
(M.P.H.)

Master of Science
(M.S.)

Doctor of Public Health
(Dr.P.H.)

The School cooperates with the graduate School of Arts and Sciences in programs leading to the Doctor of Philosophy (Ph.D.).

The School also cooperates with other University divisions in nine joint-degree programs leading to the dual degrees of:

Master of Business Administration
(M.B.A.) and Master of Public
Health (M.P.H.)

Master of Science in Urban Planning
(M.S.) and Master of Public Health
(M.P.H.)

Doctor of Dental Surgery (D.D.S.)
and Master of Public Health
(M.P.H.)

Doctor of Medicine (M.D.) and Mas-
ter of Public Health (M.P.H.)

Master of Science in Social Work
(M.S.) and Master of Public Health
(M.P.H.)

Master of Science in Nursing (M.S.)
and Master of Public Health
(M.P.H.)

Master of International Affairs
(M.I.A.) and Master of Public Health
(M.P.H.)

Master of Public Administration
(M.P.A.) and Master of Public Health
(M.P.H.)

Master of Science in Occupational
Therapy (M.S.) and Master of Public
Health (M.P.H.) (Pending)

Although the subjects dealt with in these various degree programs are related, their educational objectives, admissions criteria, and academic requirements differ significantly.

ADMISSION

Requirements for admission vary with the degree and with the program of study chosen.

Applicants seeking admission for the autumn term are urged to submit completed applications and supporting materials no later than May 15. Those seeking admission for the spring term should submit all material no later than November 15, and for the summer term, April 15.

In general, admission of any student depends on the applicant's prior academic and experiential preparation, intellectual capacity, career objectives, and motivation. A personal interview may be requested. Among important criteria considered for all applicants in all programs is ability in quantitative and verbal areas. Evidence indicative of such ability is sought in the applicant's academic records and reports of work experience. Applicants should be aware that the Graduate Record Examination, or another appropriate objective test, is a requirement for admission to the School's programs. An applicant may

submit a written request for waiver of the GRE if presenting evidence in academic transcripts or other standardized test scores of strong verbal and quantitative skills.

Master's degree and doctoral candidates are admitted on a full-time or part-time basis. Course schedules contain a substantial number of evening courses so that students with reduced academic loads may continue, or seek, employment. Part-time candidates for the M.P.H. degree must complete all degree requirements within a five-year period. Part-time students cannot expect to meet all course requirements during evening hours. Some day classes and perhaps a summer session may be needed to complete degree requirements.

For specific admission criteria see *Programs of Study*.

Application Procedures

An application, and recommendation forms are inserted at the back of this bulletin. Additional applications are available from the School of Public Health, Office of Admissions, 617 West 168th Street, New York, N.Y. 10032. The completed application must include the following items (check list):

Completed application.

Check or money order for \$35 (U.S. currency) payable to Columbia University. This application fee is nonrefundable.

Sealed and signed envelopes containing the three completed references (see References below).

Sealed envelopes containing official transcripts from all colleges and universities attended (see Transcripts below).

GRE scores should be sent directly to the Admissions Office by Educational Testing Service (See Standardized Tests below).

References: Send the reference forms to the referees. The forms instruct the evaluators to enclose the reference in an envelope, seal and sign across the seal, and return the reference to the applicant. *The sealed envelope must not be opened.* Alternatively, references may be sent directly to the School by the evaluator.

Transcripts: The Admissions Committee requires an official transcript from each of the colleges and universities attended as a registered student (regardless of the number of courses taken), including summer school, night school, and so forth. The registrar must send official transcripts directly to the Admissions Office.

If admission to a dual program is sought, it is necessary to submit a separate application to each of the schools participating in the dual degree program; for example, in applying for the joint M.P.H./M.B.A. degree program, an applicant must apply to both the School of Public Health and Columbia Business School.

STANDARDIZED TESTS

Standardized test requirements vary with the program of study chosen. Read the bulletin carefully to determine whether or not a particular standardized test is required. The standardized tests most frequently required are:

Graduate Record Examination (G.R.E.): Arrangements to take the test should be made by writing directly to the Educational Testing Service, Box 995, Princeton, N.J. 08540.

To report scores, use Institution Code No. 2159 and Department Code No. 50.

A test score received on the Medical, Dental, or Law School Admission Test (MCAT, DCAT, LSAT) may be acceptable, as a substitute for the GRE, at the discretion of the Admissions Committee.

Graduate Management Admission Test (G.M.A.T.) may be accepted for candidates applying to the joint M.P.H./M.B.A. program. Arrangements to take the test should be made by writing directly to the Educational Testing Service, Box 966, Princeton, New Jersey 08540. To report your scores use Columbia Code No. 2174.

Test of English as a Foreign Language (TOEFL): This test is required of all applicants whose native language is not English. Tests equivalent to the TOEFL may be considered. The American Language Program at Columbia University offers courses which may be required or recommended. Arrangements to take the Test of English as a Foreign Language should be made in writing directly to TOEFL, Box 899, Princeton, N.J. 08540, U.S.A.

Advanced Standing and Transfer Credits

To be awarded a Columbia degree, a student must complete the equivalent of at least two terms of full-time work at Columbia University (a total of 30 points of academic credits). No advanced standing is granted for previous experience or instruction that would reduce this 30-point requirement.

To earn the M.P.H. degree at the School of Public Health, students must complete satisfactorily a total of 45 points of academic credit, or 15 points more than the 30 required by the University. Transfer credits up to 15 points may be granted to M.P.H. degree candidates for appropriate graduate level courses, not counted toward another degree already awarded. Requests for transfer credits must be made in writing. All such requests require adequate documentation and receive faculty and administrative review before approval is granted.

Joint Program Agreements with Other Institutions

Special agreements have been made to grant advanced standing to students in particular professional programs and residencies in the metropolitan area. Details are available from the Assistant Dean for Academic Affairs.

Non-degree Students

Under certain circumstances, a student may be permitted to register as a non-degree student, that is, one who is not working toward a degree but is admitted to selected regular courses. In general such a student is allowed to elect up to 6 points per term and may receive credit for work successfully completed. A change to degree-candidate status may be made subsequently on reapplication to the Dean of the School, but no more than 12 points of credit may be transferred toward a degree for work done as a non-degree student.

Throughout the year, short-term courses and seminars are occasionally offered that normally do not carry credit toward a degree. Participants in these are not registered routinely for points of credit. Those wishing to receive academic credit may apply to the School as non-degree students. If they meet admission criteria and are accepted, special arrangements are made through the sponsoring academic unit of the School to provide course material and faculty time, on an individual basis, sufficient to justify the granting of University credit.

Summer Session

The School of Public Health offers courses selected from its academic year curriculum in the University Summer Session. These courses are open to current students (with the approval of their advisers in the School of Public Health), other graduate stu-

dents in Columbia University, and qualified visitors. Visitors who are registered students in good standing at accredited schools of public health may apply to take public health summer courses. Other individuals with relevant experience in public health or professions related to health may also apply to the Summer Session for courses in public health. Visitors who subsequently apply and are admitted to the Columbia University School of Public Health may apply no more than 12 points previously earned as Summer Session students in public health courses. Details are available in the Summer Session bulletin.

DEGREE PROGRAMS

Master of Public Health Degree

Outlined here is general information about the M.P.H. degree program. For specific admission and degree requirements see *Programs of Study*.

For most candidates the M.P.H. degree will not be their first professional degree. Most students enter the M.P.H. degree program with previous master's or doctoral degrees or with varying years of practical experience in professional fields related to public health. A limited number of extremely well qualified students are admitted without previous advanced degrees or experience. The common educational objective of the different programs leading to the M.P.H. degree is to provide all candidates with a strong general public health orientation along with opportunities to gain new knowledge, points of view, and skills in specific public health areas.

General basic academic requirements for admission to the M.P.H. degree program include a bachelor's degree from a recognized university or college, evidence of satisfactory preparation in quantitative subject areas, and an acceptable academic average. Graduates of approved medical, nursing, dental, and veterinary

schools and applicants who have earned master's or doctoral degrees in other health-related professions, or in nonhealth-related areas such as law, engineering, or business, will find their academic backgrounds particularly suited to this program. Some previous professional or other relevant working experience is highly desirable. All applicants are considered on their individual merits.

To earn an M.P.H. degree all students must satisfactorily complete the equivalent of three terms of full-time academic work and at least one term of practical experience (practicum). A term is four months in length. Students must accumulate a total of 45 points, averaging, on a full-time basis, 15 points each term. Courses providing the required points of credit within the M.P.H. degree program are grouped as follows:

Core courses—required of all M.P.H. students: 5 courses, totalling 15 or 16 credits.

Concentration courses—requirements vary among divisions.

Elective courses—with permission of adviser, may be taken in School of Public Health or other Columbia Graduate School.

CORE COURSES

Core courses provide a common body of knowledge in basic public health philosophy and practice and are required of all candidates for the M.P.H. degree regardless of previous training, professional interests, career objectives, or study program. By demonstrating prior competence in a core subject, a student may be permitted to substitute course work in the same or another area, provided the substitution is approved by both the student's faculty adviser and the core course instructor. All core courses are offered twice a year, once during the day and once in the evening. The ba-

sic core curriculum includes an introduction to:

Biostatistics
Epidemiology
Health administration
Environmental science
Sociomedical sciences

As a prerequisite for the biostatistics core courses students must demonstrate an acceptable Graduate Record Examination quantitative score or proficiency on an arithmetic skills examination. Since a knowledge of biostatistics is *basic* to many public health endeavors, students are urged to provide themselves with remedial arithmetic instruction, if necessary, before arrival at the School. Students without a health professional background are required to take *Public Health P6002—Medical Background* in order to be familiar with the basic aspects and terminology involved in the activities of health professionals.

CONCENTRATIONS

Concentration courses provide a series of educational experiences focusing on specific public health areas, and offering students opportunities to concentrate on particular issues, interests, or career goals. All candidates for the M.P.H. degrees are expected to select one of the following areas of concentration and to follow individually tailored programs of study within that concentration.

General public health

Biostatistics

Environmental sciences, including environmental and occupational health

Epidemiology

Geriatrics and Gerontology

Health administration

Population and family health, including maternal/child health

Sociomedical sciences

Tropical medicine, including parasitic diseases and international health

Each of these areas of concentration has its own specific educational objectives, requirements, and methods of study. For a full description, see *Programs of Study*. Applicants should indicate on the application form which concentration they would like to pursue.

ELECTIVE COURSES

Elective courses may be selected from within a student's area of concentration or in some other field, from among all courses offered at the School, or in other departments of the University. Some elective points are earned in formal courses; others may be earned on a tutorial basis. The choice of elective courses is made with the approval of faculty advisers, and that of course instructors where indicated.

PRACTICAL EXPERIENCE

One term of practical experience is required of all M.P.H. degree candidates, providing educational opportunities which are different from, and supplementary to, the more academic aspects of the program. The focus, content, approach, and timing of the practicum vary with the separate programs and with the particular needs of each student. The practicum may take the form of field or agency observations; placement in an administrative, research, or clinical setting; participation in ongoing research or program activities; or independent study. It may be completed before or after the final term of academic work, or be integrated into the academic program. The duration of the practicum may be modified for some students—either shortened, lengthened, integrated, or waived entirely—depending on their professional standing, preparation, and career objectives. Any substantial alteration in the

practicum requires prior written approval of the School administration.

Master of Science Degree

This is a specialized degree program. Courses of study leading to the M.S. degree are offered in:

Biostatistics
Epidemiology
Parasitology

These M.S. degree programs provide students with opportunities to concentrate in particular fields of public health interest and to develop special skills and expertise in selected concrete subject areas. Like the M.P.H. degree program, a bachelor's degree from a recognized university or college, and an acceptable academic record, are required for admission. Unlike the M.P.H. degree program, there is no required common core of public health courses. To graduate, the student must complete a minimum of 30 academic points at the School. The curriculum for each area of study is developed by program faculty members, with the School maintaining overall responsibility for review. Requirements for admission and for the academic work and any practical experience needed for the degree vary with the particular program of study.

Admission requirements and program descriptions are given in detail under the subject areas (see *Programs of Study*). Personal interviews are usually required before admission.

Doctor of Public Health Degree

The Dr.P.H. degree program is designed for professionals wishing to prepare for teaching, research, or advanced administrative positions in a major area of specialization which coincides with the School's divisions or established programs of study. The degree program is administered by a standing doctoral committee of the

School, which carries out faculty policy on admission to the doctoral program and upholds the criteria for granting the degree.

All candidates for the Dr.P.H. degree must have earned the M.P.H. degree or the equivalent. Applicants admitted with other master's or doctoral degrees in health-related fields are usually required to take a number of predoctoral public health courses. In addition, all applicants must obtain the written endorsement of the head of the division or program in which major studies are to be pursued. In considering applicants for admission to candidacy for doctoral work, due weight is given to records of the individual's previous accomplishments and to evidence of the applicant's potential to realize expressed goals. Personal interviews are usually required before acceptance. Applicants whose M.P.H. degree was earned at a university other than Columbia must have taken the aptitude test of the Graduate Record Examination no more than three years prior to application.

The Dr.P.H. degree calls for completion of an approved program of study totaling no fewer than 40 doctoral points of credit (with no fewer than 50 points for health administration). To accomplish this the candidate is required to spend the equivalent of two terms of full-time course work (30 points) in residence, after which there is a qualifying examination. In health administration the qualifying examinations are taken after 40 points of course work. Upon completion of the course work a student is permitted to register for 2 of the required 10 points of doctoral research instruction before passing the qualifying examination. This examination is administered by the division or program in which the student is working, and on its successful completion that student registers for the additional required points of doctoral research instruction credit and devel-

ops, writes, and submits an acceptable doctoral thesis that presents the results of independent and original work. In most cases, the completion of doctoral course work and the dissertation can be expected to take more than two full-time academic years. An overall time limit of seven years from the date of first registration as a doctoral candidate has been established.

DUAL PROGRAMS WITH OTHER UNIVERSITY UNITS

The School of Public Health offers a variety of formal and informal cooperative educational programs with other units and divisions of the University. These joint activities are seen as important opportunities for students to explore the interdisciplinary interfaces of professional areas from new perspectives. Students wishing to enter joint degree programs are advised to submit separate applications to each school. These applications should indicate that the individual wishes to be a joint-degree candidate. Additional information on these programs may be obtained from the Office of Student Services, School of Public Health.

Masters of Business Administration and Master of Public Health Degrees

Designed to train individuals for administrative positions that require sound management practices and a broad knowledge of public health, the joint degree program offered by the Graduate School of Business and the School of Public Health leads to the simultaneous award of two degrees—the Master of Business Administration (M.B.A.) and the Master of Public Health (M.P.H.).

Normally, application for admission to the joint degree program should be made to both Schools si-

multaneously. Applicants must meet the admission requirements of both schools.

Master of Science in Urban Planning and Master of Public Health Degrees

The School of Public Health and the Graduate School of Architecture, Planning, and Preservation offer a joint program for the degrees of Master of Public Health (M.P.H.) and Master of Science (M.S.) in urban planning. The primary objective of this dual-degree program is to prepare individuals for *planning* positions in health systems agencies, various units of government, and the private health sector.

Doctor of Dental Surgery and Master of Public Health Degrees

This dual-degree program is jointly organized and directed by the schools of Public Health and Dental and Oral Surgery. Its objective is to graduate students who have the skills of both dentistry and public health. In addition to clinical dentistry, students gain broad insights into the complexities of the evolving health care delivery system.

For admission to the joint program a student must first be accepted as a degree candidate in the School of Dental and Oral Surgery. Formal application and admission to the School of Public Health may be made at any time during the first three years of dental training.

For further information, consult the Dean's Office in the School of Public Health or the Dean's Office in the School of Dental and Oral Surgery.

Doctor of Medicine and Master of Public Health Degrees

This dual-degree program, under the joint direction of the School of Public

Health and the College of Physicians and Surgeons, is intended for medical students who have a particular interest in the social and community aspects of medical care. Its objective is to prepare physicians for an expanding range of opportunities and roles in the changing health- and medical-care scene. In addition to preclinical and clinical medical training, students gain substantive knowledge of the health care delivery system and the technological, social, and political forces which contribute to patterns of illness and health care.

Before being considered for admission to the joint-degree program, the applicant must first be accepted as a degree candidate in the College of Physicians and Surgeons. Formal application to the School of Public Health may then be made at any time before the medical student enters the fourth year of medical training.

For further information, consult the Dean's Office in the College of Physicians and Surgeons.

Master of Science in Social Work and Master of Public Health Degrees

Increasingly, graduate students preparing for professional careers in the human services are interested in combining public health with social work studies. The nature and extent of today's health problems, and the alternatives available for their solution, involve political, economic, community, organizational, behavioral, and other social issues. This dual-degree program with the School of Social Work permits students to develop orientation and skill in both social work and public health areas. Applicants must apply to both schools. Admission criteria of both schools must be met. Generally, students who currently are enrolled as degree candidates in either school, who wish to apply to the joint program, should do so no later than the end of the second term of registration.

For further information, consult the Office of the Dean of the School of Public Health and the Office of the Dean of the School of Social Work.

Master of Science in Nursing and Master of Public Health Degrees

The School of Public Health and the School of Nursing offer a joint program for the M.P.H. degree and the M.S. degree in nursing. The primary purpose of this interdisciplinary program is to prepare nurse practitioners or clinical specialists to function effectively as community health practitioners, helping to interpret, plan, and/or administer programs.

This program is directed toward nurses with at least one year's appropriate experience who expect to be practicing clinicians and at the same time hold responsible administrative positions, or who plan a career in clinical nursing but desire to enhance their clinical knowledge with a related public health concentration. Applicants must meet the admission standards of both schools. Applicants should indicate on the School of Public Health application form that they are applying to the joint M.S./M.P.H. program.

For further information, consult the Dean's Office in the School of Public Health and the Dean's Office in the School of Nursing.

Master of Science in Occupational Therapy and Master of Public Health Degrees

The School of Public Health and the program in Occupational Therapy of the Faculty of Medicine plan to offer, pending approval of the University Senate, a joint program for the degrees of Master of Public Health (M.P.H.) and Master of Science (M.S.) in Occupational Therapy. The program is designed to prepare occupational therapists for leadership roles in shaping the health policies of

America's increasingly complex health care delivery system.

An understanding of public health principles will help students to transfer their clinical skills to community-based services and to assume policy positions in school systems, businesses, and national and state agencies concerned with health policies and practices. In addition, they will become more effective advocates for traditionally neglected groups such as the homeless, the mentally ill, and, through health promotion, even the well population. Applicants must meet the admission requirements of both schools.

Master of International Affairs or Master of Public Administration and Master of Public Health Degrees

The purpose of the joint degree program (M.I.A./M.P.H.) of the School of Public Health and the Master of International Affairs Program is to train men and women for careers in international and national agencies involving health policy analysis and/or administration. The emphasis of the School of International and Public Affairs on political and economic aspects of various world regions complements student concentration in many areas of public health.

The purpose of the joint degree program (M.P.A./M.P.H.) of the School of Public Health and the Graduate Program in Public Policy and Administration is to train men and women for careers in health policy analysis and administration and for positions in local, state, and federal governments and in the private sector.

For each of the joint degree programs, admission is contingent upon acceptance by both schools. Students may apply to one school first or to both schools simultaneously and may begin the joint program in either of the schools involved.

Doctor of Philosophy Degree

The Doctor of Philosophy (Ph.D.) degree may be earned in the following fields, under the guidance of the faculty of the School:

Biostatistics
Epidemiology
Sociomedical Sciences

These Ph.D. degree programs are under the supervision of subcommittees of the Executive Committee of the Graduate School of Arts and Sciences. Students in Ph.D. degree programs register on the Morning-side campus of the University, although their studies may be conducted in part at the School of Public Health.

There is also a Ph.D. program in Parasitology through the Department of Microbiology.

The Master of Philosophy degree is awarded to students in the Ph.D. programs when they have completed satisfactorily all requirements of the Graduate School of Arts and Sciences and their departments. All students who wish to earn the Ph.D. degree must first earn the M.Phil. degree.

For further information see *Programs of Study* under the three subject areas.

PROGRAMS IN CONTINUING EDUCATION

The instructional activities of the School extend beyond the campus to provide continuing educational opportunities for practitioners in the field. This nondegree educational activity serves professional personnel of many disciplines in official and voluntary health agencies and in health facilities, including hospitals, nursing homes, and health care programs. Subjects of current interest are present in short-term, intensive courses, workshops, and seminars often conducted in cooperation with state and local health agencies and other professional groups.

Organization of the School of Public Health

Primary responsibility for developing the programs of study rests with the faculty, although student participation in curriculum planning and evaluation is considered essential. The School as an academic institution has overall responsibility for review of the quality and the direction of its educational efforts.

The School is administratively organized into the following divisions:

Biostatistics
Environmental Sciences
Epidemiology
Geriatrics and Gerontology
Health Administration
Population and Family Health
Sociomedical Sciences
Tropical Medicine

Each division is responsible for the development of instruction and research in its academic area. The maintenance of standards for instruction is the responsibility of the Curriculum Committee of the School and the analogous committees of the divisions.

The academic areas provided by each of the divisions are described more fully below.

Biostatistics

The discipline of biostatistics is concerned with the elaboration and use of statistical methodology for various kinds of quantitative studies in biology, medicine, and health. Biostatistical skills are necessary in research design, collection and organization of data, analysis, and final presentation of results. The methodology is derived largely from the fields of applied mathematics and probability.

Individuals entering the field of biostatistics come from diverse back-

grounds. Some are mathematicians, others have majored in the natural or social sciences, and others are professionals in such areas as medicine or dentistry. All should have a background in the sciences, with adequate preparation in mathematics. A knowledge of calculus and matrix algebra is desirable. Most important is a liking for quantitative methods and intuition and common sense in working with quantitative material.

Environmental Sciences

The Division of Environmental Sciences emphasizes the improvement of human well-being by the study and control of health hazards in the environment. In an earlier era, this field was partially represented in such fields as preventive medicine, sanitary sciences, occupational health, and toxicology, and these traditional concerns remain. The focus, however, has shifted to major contemporary health problems, such as the prevention of cancer and certain other diseases whose causation appears to be due largely to environmental factors. Identification and control of toxic chemical substances and an understanding of the mechanisms by which they cause human disease are emphasized in the research and teaching programs. Graduates are prepared for policymaking, research, and service roles.

Epidemiology

Epidemiology is an integral part of human ecology. It is concerned with studying the distribution of health in populations. The discipline of epidemiology has developed a conceptual theory, a specific methodology, and a

body of substantive knowledge. An academic background in health, the biological or social sciences, or in mathematics and statistics is desirable for candidates wishing to enter this field.

Geriatrics and Gerontology

The Division of Geriatrics and Gerontology was established in the School of Public Health in 1985, in recognition of this country's burgeoning elderly population and the implications of this demographic shift for the field of long-term care, both institutional and community-based.

Because health care of the elderly involves all health and related professional skills, the Division is interdisciplinary in both its faculty and student body. The division's curriculum stresses all aspects of gerontological administration (see "Program of Study"), and the Division welcomes students in all joint degree programs available in the School of Public Health.

Division students, most of whom already have some health professional training, receive a deepened understanding of disease and social factors affecting the elderly, and expand their skills for coping with policy, regulatory, and financing issues. Graduates are prepared to assume leadership positions in health care planning, program planning, service delivery, agency administration and retirement planning, as well as to serve as researchers, statisticians, and clinical educators.

Health Administration

Health Administration is a diverse area including studies in administration, management, planning, and policy formulation. The growth of health care as an "industry" has led to the need for more quantitative information concerning how health care is provided and distributed, as well as

information concerning effectiveness and cost benefit. The division provides background, specific methodology, and skills in the study, provision, and management of health care and health care enterprises. Faculty members represent various health professional disciplines as well as business, social science, and legal backgrounds. Joint efforts are undertaken with the Graduate School of Architecture, Planning, and Preservation, the School of Dental and Oral Surgery, the School of International and Public Affairs (Public Policy and Administration and International Affairs), the School of Nursing, the College of Physicians and Surgeons, and the School of Social Work.

Population and Family Health

The strength of this division's academic program is its combination of theory and practice. The integration of teaching, research, and service activities provides unique learning opportunities for students. Through collaborative agreements with federal, state, local, and international governmental agencies and voluntary organizations, the multi-disciplinary faculty and students are actively involved in a variety of health promotion and disease prevention projects such as: providing Maternal and Child Health and Family Planning (MCH/FP) services; carrying out studies on child and family health, reproductive health, public health nutrition and adolescent fertility; providing technical assistance in the design and evaluation of MCH/FP and public health nutrition programs; and conducting short-term training for health professionals in the U.S. and developing countries.

The fields of maternal and child health, family planning, and public health nutrition, although discrete in some well-defined ways, have major common relationships and concerns. They share health objectives, the body

of knowledge required for study, population groups served, programmatic strategies, research technologies, and educational approaches. The objectives of the program are to give students a general perspective on MCH/FP and nutrition, to help them define major issues and understand the complex nature of solutions to identified problems, and to provide them with the skills necessary to play effective roles as policy makers, program administrators, and research and evaluation officers.

Sociomedical Sciences

The Division of Sociomedical Sciences brings together a multi-disciplinary faculty of social scientists and health professionals interested in studying the effects of social and cultural factors on health and health care. Although the educational goal of the division is the training of researchers and teachers, the instructional program in sociomedical sciences offers all students in public health an introduction to the social and behavioral influences that play an increasingly important role in the health of individuals and communities. Courses are offered which focus on attitudes and behavior with significance for measuring health status in populations, planning health care delivery, formulating health policy, and advancing health education. Current areas of research interest among sociomedical sciences faculty include preventive health behavior and health intervention strategies, health consequences of life styles, mental health effects of AIDS, social supports, stress and coping, sociocultural aspects of drug behavior and alcoholism, adolescent health, social aspects of disability, the health professions and the organization of health care, the health of the aged and of minority groups, social factors in pain, social indicators, and health program evaluation. Opportunities are available for stu-

dents to participate, as part of their academic program, in research projects being conducted by faculty members of the Division.

Tropical Medicine

The Division of Tropical Medicine is involved in instruction and research of particular significance to those who wish to pursue a career in a health field as it relates particularly to tropical countries or to persons who have lived in tropical areas. In our modern society, involving the rapid movement of large groups of people to and from tropical areas, health problems formerly unique to these areas have appeared world-wide. The activities of this division are applicable, therefore, to a wide variety of individuals and situations both in the United States and abroad.

Programs of Study

The programs of study of the School of Public Health lead to the following degrees: Master of Public Health, Master of Science, Doctor of Public Health, and with the Graduate School of Arts and Sciences, the Doctor of Philosophy.

MASTER OF PUBLIC HEALTH PROGRAM

This program provides the basic degree in public health offered by the School. Required core courses, a series of courses to form a concentration, electives, and a practicum comprise the elements of the program. Individuals entering the field of public health come from a variety of educational backgrounds. Effectiveness as public health professionals requires a general knowledge and understanding of the field, particular expertise in either a substantive health-related discipline or technical area, and competence and confidence in handling decisions that will affect the health of large numbers of people.

Core Courses

These courses introduce concepts and principles of biostatistics, epidemiology, health administration, environmental health, and sociomedical sciences.

Areas of Concentration

GENERAL PUBLIC HEALTH

This is an interdivisional and interdisciplinary concentration under the general administrative direction of the Division of Health Administration. Each student's program is planned individually, using all educational resources available at the School or in other University units.

Selection of this general public health sequence within the M.P.H. degree program is most suitable for candidates who already have professional backgrounds and experience and have clear educational goals that require skills and knowledge from two or more of the School's divisions. The objective of the program is to develop competence in public health practice through broad orientation in current public health issues, substantive knowledge about recent developments in one or more areas of particular health concern, and opportunities for sharpening specific technical skills in administrative, clinical, or research areas.

Courses in general public health are selected in consultation with faculty advisers, to meet individual needs. It is expected that each student will focus in depth on one or more subject areas. Emphasis might be given to a major public health subject area, such as environmental science, or to an area covered in the School's curriculum by a series of related courses, such as mental health, health education, dental health, nutrition, maternal and child health, or international health. Thus the requirements for the general public health program include courses which reflect at least one of these interests. In addition, each student is expected to develop and demonstrate improved skills in some technical area, such as research design, program evaluation, health planning, or administration, and to select from the School curriculum those courses which help meet this objective.

A master's essay, usually undertaken in conjunction with the practical experience, is required for the concentration. However, the essay may be waived under certain circumstances. Students for whom the prac-

tical experience has been waived prepare the master's essay on a subject agreed upon with the adviser.

For medical school graduates interested in a career as a public health officer, the School cooperates with the New York City Health Department to offer an accredited residency in public health that leads to a Master of Public Health degree and certification for board requirements. Further information can be obtained from the Assistant Dean for Academic Affairs.

BIOSTATISTICS

The educational objective of the M.P.H. degree concentration in biostatistics is to prepare students to utilize and adapt statistical procedures to health and medical care programs, and to enable them to serve in a technical capacity as resource persons and collaborators in field and programmatic studies.

Courses in biostatistics provide an introduction to statistical methodology and experience in statistical procedures. They explore the applications of these procedures to the field of public health. These courses are selected on an individual basis in accord with the background, interests, and career goals of the students, and in consultation with faculty advisers. Courses in statistical methodology cover such areas as probability theory and probability models in the health field, medical and vital statistics, life table methods, statistical analysis, sampling, and data processing. For applications of biostatistics to the field of public health, students select courses from the public health curriculum relating to such areas as research technology in health administration, design and analysis of epidemiological studies, evaluation of health programs, and research methods in sociomedical sciences.

ENVIRONMENTAL SCIENCES

The objective of the concentration in environmental sciences is to prepare

professionals for policy-level or research positions in government agencies, industrial corporations, and labor or consumer-interest organizations concerned with health-related problems in the workplace and general environment. Emphasis is placed upon environmental toxicology and the prevention of cancer and other diseases related to chemicals in the environment. In addition, courses provide sufficient breadth to enable graduates to analyze environmental or occupational health issues and develop preventive programs. To supplement resources available to Columbia University, students are encouraged to cross-register at other advanced educational institutions in the New York City region. Prerequisites include the ability to use college-level physics and organic chemistry and to communicate using social science and philosophical concepts.

Courses in the Master of Public Health environmental sciences concentration emphasize a multidisciplinary, problem-oriented approach. Initial courses provide a basic introduction to environmental toxicology, epidemiology, environmental hygiene, occupational medicine, economics, legal and regulatory concepts, and specific case examples in environmental problems. Students are then encouraged to focus on a specialized area. They are given opportunities to work with research personnel engaged in laboratory or field studies on current environmental science problems, such as carcinogenesis, chemical hazards in the workplace, and noise or water pollution. The aim of the program is to provide students with the knowledge, confidence, and astuteness to recognize and analyze environmental issues, to use sound principles of scientific analysis and management, and to evaluate environmental control programs.

For medical school graduates interested in occupational medicine, the division cooperates with hospitals

and industries in the region to offer an accredited Occupational Medicine Residency Program that provides both didactic and clinical training leading to a Master of Public Health degree and certification for board requirements. Further information should be obtained directly from the division.

EPIDEMIOLOGY

This concentration emphasizes the basic epidemiological concepts and skills essential for research, program planning, and evaluation. These include (a) a conception of health and disease as determined by the interactions of biological, environmental, and social variables; (b) the design of epidemiological studies, including field surveys, and the collection, analysis, and interpretation of large amounts of data; and (c) an understanding of the epidemiologic principles and methods that serve as the foundation for rational strategies of public health intervention. The program aims to prepare students for careers in public health with a focus on research and community diagnosis, public health action, and program evaluation.

Courses in epidemiology cover methodological, biomedical, and sociomedical areas. The selection of specific courses depends on each student's background and major areas of interest. In addition to a general orientation to the principles of epidemiology and the design and application of epidemiological studies, students may focus on epidemiological approaches to one of several special areas of public health concern, such as chronic diseases, child health and development, psychiatric problems, and evaluation of programs and services. Other courses focus on methods in epidemiology including study design, measurement, and statistical issues.

A master's essay, usually undertaken in conjunction with the practical experience, is required for the con-

centration. Students usually register for this during the term following the practicum. Students for whom the practical experience has been waived prepare the master's essay on a subject agreed upon with the adviser.

GERIATRICS AND GERONTOLOGY

The Division of Geriatrics and Gerontology places a major emphasis on the area of Long-Term Care Administration with a principal goal of training administrators, policy analysts, planners, researchers, and other health care professionals in institutional and long-term care.

There is a profound need to provide a core of professional personnel aspiring to careers in long-term care administration with the expertise and skills to address the complex issues in geriatrics and gerontology. The policy, financing, regulatory, and programming issues in the field of long-term care require intensive study as they relate to the aging population.

The program of study offered in the Division of Geriatrics and Gerontology is designed to upgrade and expand the skills of students interested in long-term care by adding to core public health training (biostatistics, epidemiology, environmental sciences, health care organization, and the social sciences) gerontological skills courses and courses in management, organizational theory, financing and economics, long-term care policy, regulation, and programming.

To receive the M.P.H. degree, a student must complete 45 credits of academic study, a four-month practicum, and a master's essay. The program can be pursued on a full-time or part-time basis. A full-time student can earn the degree within 12-15 months (including one summer) depending upon the type of practicum selected. The curriculum requires 5 core courses (15 credits) and a distribution of 30 credits among courses in

gerontology, geriatrics, and long-term care and electives.

The program in geriatrics and gerontology is unique when compared to other programs because its primary emphasis is on having professionals, trained in health fields, address programs for the elderly as well as problems of populations and communities. It offers the quantitative tools necessary to identify problems, find interventions, and evaluate the effects of those interventions, to students who already have some health professional or related professional skills.

Special resources of the Division include the Center for Geriatrics and Gerontology and Long-Term Care of the Faculty of Medicine and the Department of Geriatrics Research of the Psychiatric Institute and the New York State Office of Mental Health. These settings provide research, educational, and clinical environments for students and faculty to explore critical issues in the field of aging.

HEALTH ADMINISTRATION

The health administration program prepares individuals for careers in health institutions, public and voluntary agencies, and industry as general managers or as functional experts. The objective of the program is to provide students rigorous preparation in basic management skills and in advanced managerial planning. Special emphasis is placed on the role of administrators in meeting the health needs of the larger community.

In the health administration concentration students take three required courses and at least one elective course in each of three areas. The required courses are in financial management, health economics, and organizational theory. The elective course areas are evaluation and analytic methods, policy and planning, and law and philosophy. In addition, students may focus on a particular area of health administration by taking

elective courses in the School of Public Health and other schools of the University. To complete the degree, all students must demonstrate the ability to research an issue and present the results in a master's-level essay. This requirement may be waived in certain circumstances.

It is strongly recommended that students who do not have previous clinical or administrative experience in health institutions take a nine-to-twelve-month paid administrative residency upon completing the M.P.H. program. The residency program fulfills the practicum requirement. Residencies are available in hospitals, long-term care facilities, public agencies, and other health-related settings. Working under the direct supervision of experienced administrators, residents have the opportunity to integrate and apply knowledge gained in the classroom and to obtain the practical management skills necessary for senior management positions.

For students interested in specializing in a particular area of health administration the division offers the opportunity for specific concentrations such as the nurse administrator program. Double-degree master's programs have also been established with the Graduate School of Architecture, Planning, and Preservation, the Business School, the School of Dental and Oral Surgery, the School of International and Public Affairs (Public Policy and Administration and International Affairs), the School of Nursing, the College of Physicians and Surgeons, and the School of Social Work. For information about dual-degree programs, see *Admission and Degree Requirements—Degree Programs and Dual Programs with Other University Units*.

POPULATION AND FAMILY HEALTH

This interdisciplinary concentration builds on a broad core of Maternal and Child Health, Family Planning,

Public Health Nutrition, and Sociomedical knowledge. The program is designed for professionals representing the disciplines of pediatrics, obstetrics, nursing, health education, social work, nutrition, law, social sciences, and public health administration and those with more limited experience in the field.

The Academic Program concentrates on four major areas aimed at disease prevention and health promotion for women, children, and families: basic public health knowledge and skills; understanding of MCH/FP and public health nutrition; program planning and evaluation; and health policy and administration. The program is designed to provide health professionals with a theoretical framework, general concepts, and specific techniques and skills required in the fields of MCH, family planning, and nutrition. Subject areas presented in both domestic and international contexts include: prenatal, infant, child, and family health; population issues; fertility and human reproduction; nutrition status assessment and promotion; MCH/FP service program design; health planning; demographic analysis; and fertility survey methods. Additional viewpoints, skills, and approaches to MCH/FP issues are offered through courses in other study programs—for example, in epidemiology (perinatal and child health), biostatistics (life tables), health administration (health planning and economics), mental health, sociomedical sciences, medical anthropology, and nutrition.

Graduates of the Division are employed in a variety of federal, state, local, and international government agencies, voluntary organizations, MCH/FP service programs, and research organizations.

SOCIOMEDICAL SCIENCES

The sociomedical sciences division is organized around the study of social and behavioral factors that affect

health and health care. As a predoctoral course of study, the master's program in sociomedical sciences prepares students to participate as members of research teams, able to contribute to various phases of research such as data collection and data analysis. Health research training can lead to employment in universities, government, hospitals, health planning, and health consulting agencies. The master's program can also be undertaken as a postdoctoral course of study, offering Ph.D.s in the social sciences intensive training in applied research, and offering M.D.s training in research methods and an understanding of the social dimensions of community health problems. All students in the division take courses in medical sociology, medical anthropology, health psychology, and research methods. Students without prior health research experience will gain practical training in ongoing research projects. All students complete a master's essay which may take the form of a funding proposal or publishable research paper. The division's multidisciplinary faculty offers elective courses and independent study in areas such as program evaluation, disease prevention and health promotion, health indicators, drug and alcohol abuse, the health professions and the organization of health care, ethical issues in medical decision-making, social aspects of disability, social supports and social networks, stress and coping, gender issues in health, aging, and mental health of minorities. Current research programs in the division include studies of aging and social supports, stress and pain, mental health effects of AIDS, drug abuse problems in adolescents and young adults, and consequences of life style.

TROPICAL MEDICINE AND PARASITOLOGY

This educational program is designed for students who have backgrounds in biology, zoology, and organic

chemistry and who wish to pursue a career in the health field as it relates particularly to tropical countries or to persons who live or have lived in tropical areas. The program is also designed for physicians, nurses, and other health professionals involved in health care in the developing countries.

Courses in tropical health offer a combination of laboratory and other classroom learning experiences covering such areas as epidemiology, immunology, diagnostic techniques, and control of infectious disease, with particular emphasis on those common to tropical areas; taxonomy, biology, and control of arthropods associated with human disease; comparative health systems in developing countries; and cultural influences that affect people and their relationship to health.

Elective Courses

Elective courses may be selected from any appropriate field in consultation with faculty advisers. Students should consider appropriate graduate-level courses and tutorials in any unit of the university.

The Practicum

The term of practical experience, a requirement for the M.P.H. degree, may take a variety of forms. The student may be placed in an administrative post or field experience in an institution or agency, participate in an ongoing research or evaluation project, or conduct an independent study. Arrangements are made on an individual basis in consultation with faculty advisers in the student's field of concentration. Students are expected to submit written reports at the conclusion of the practical experience.

MASTER OF SCIENCE PROGRAMS

Biostatistics

This special program of the Division of Biostatistics is designed primarily to prepare individuals to work effectively as biostatisticians in a variety of biomedical, clinical, and laboratory research settings. Candidates for admission may come from medical and nonmedical fields. As minimum requirements the applicant must possess a bachelor's degree from a recognized university or college, present a satisfactory academic record, and show evidence of adequate preparation in mathematics and the natural sciences.

The curriculum includes relevant courses in mathematics and statistics, given on the Morningside campus, and introductory and advanced courses in biostatistics and collateral subjects in public health, given at the School. The length of the program varies with the background, training, and experience of the candidate, but shall not be less than two full-time academic terms. The usual period needed to complete the degree is three academic terms.

Epidemiology

This program enables students to gain a command of the major concepts and techniques of epidemiology, including a grounding in biostatistics. A minimum of two terms of full-time academic work and a master's essay are required for the degree.

Parasitology

This program is considered either as preparation for advanced graduate training leading to a doctoral degree for candidates with only an undergraduate degree or as specialized training for physicians, nurses, or other health professionals who wish

to acquire new skills. Candidates for admission should have at least a bachelor's degree, adequate training in the sciences, a good academic record, and a satisfactory score in the Graduate Record Examination. If practical, a personal interview is also required.

The curriculum is flexible and is designed to meet the particular needs of each candidate, but it usually includes courses in immunology, biochemistry, microbiology, cell biology, and parasitology. A master's thesis is required and is based either on library research or on independent laboratory work done under the supervision of a faculty member. A minimum of 30 points is required for the degree; this can usually be achieved in two to three full-time academic terms.

DOCTOR OF PUBLIC HEALTH PROGRAMS

For specific admission criteria and academic requirements for this degree, see *Admission and Degree Requirements*—Doctor of Public Health Degree.

Biostatistics

A course of study and research leading to the Dr.P.H. degree may be pursued under the supervision of members of the Division of Biostatistics. A doctoral thesis demonstrating the candidate's ability to make original biostatistical contributions to the solution of a problem in public health is required.

Environmental Sciences

Faculty members of the Division of Environmental Sciences also supervise selected advanced students in doctoral studies leading to the degree of Doctor of Public Health (Environmental Sciences). Usually, a student first registers in the Master of Public Health program and then requests

transfer to the Doctor of Public Health program if performance is adequate. In cases where a candidate already has a master's or doctor's degree in a related field, this requirement may be waived. Each student's program is planned according to individual career objectives and interest. The Doctor of Public Health (Environmental Sciences) program has the same aims as those described in the Master of Public Health (Environmental Sciences) program but adds an intensive research dimension.

The division can also provide guidance to selected students who wish to pursue a Ph.D. degree in certain basic science areas related to environmental sciences (for example pharmacology, genetics, and biochemistry), but at the same time engage in courses or work with faculty members in the Division of Environmental Sciences.

Epidemiology

The Doctor of Public Health degree program prepares professionals in biomedical and sociomedical fields for advanced careers as epidemiologists. This professional degree is suited to candidates with primary training in some other field, as, for instance, medicine, nursing, dentistry, psychology, sociology, and social work.

Health Administration

The purpose of this program is to provide advanced study in the areas of health sciences research, health policy, health planning, assessment and evaluation of health care and institutional management (including general hospitals, long-term care facilities, and ambulatory care), financing, organization and delivery of health services, and the history and philosophy of public health. The course of study is designed for persons who have the M.P.H. degree or the equivalent, have health-related back-

grounds, and have demonstrated a capacity for original work and/or its implementation prior to applying to the Dr.P.H. program.

Population and Family Health

A doctoral degree program in population and family health is available for selected advanced students through the School of Public Health.

Sociomedical Sciences

A program leading to the Doctor of Public Health degree may be pursued in the division's current areas of research activity and specialization, or in any other area involving study of social-behavioral aspects of health. Training in research methods drawn from public health and the social sciences will be emphasized. Following completion of coursework and comprehensive examinations, students will complete a dissertation on a problem or issue in the health field of interest to them, using social science theories, concepts, and methods. Graduates of the program will be prepared to enter research and teaching positions in health professional schools, or to engage in health research in a variety of settings including government, hospitals and health care agencies, and health planning and consulting organizations.

DOCTOR OF PHILOSOPHY PROGRAMS

Students may pursue the Doctor of Philosophy degree in the following disciplines involving public health: biostatistics, epidemiology, and sociomedical sciences. The Doctor of Philosophy programs are under subcommittees of the Graduate School of Arts and Sciences.

Requirements for admission to the Graduate School of Arts and Sciences include a bachelor's degree with 90

points of credit in the liberal arts and sciences.

Additional information on the Ph.D. programs may be found in the bulletin of the Graduate School of Arts and Sciences. Application to the programs is through the Graduate School Admissions Office.

Biostatistics

Advanced students in biostatistics may pursue work toward a Ph.D. degree in biostatistics. They work under the supervision of the Doctoral Program Subcommittee on Biostatistics of the Graduate School of Arts and Sciences.

Epidemiology

The Doctor of Philosophy degree program, sponsored by the Graduate School of Arts and Sciences, trains specialists in epidemiology who are capable of advancing the theory, methods, and knowledge of the discipline. This academic and research degree is suited to candidates with a bachelor's degree and a background in the biomedical, social, or statistical sciences.

Sociomedical Sciences

The Sociomedical Sciences Ph.D. program is interdisciplinary, with study divided between the School of Public Health and one social science department in the Graduate School of Arts and Sciences (Anthropology, Economics, History, Political Science, Sociology) or the Department of Social Psychology in Teachers College. The aim of the program is to train researchers and teachers to apply social science theory and methods to the study of social factors related to health status and health care needs, the social structure of health-care delivery systems, and the relation between these systems and the popula-

tions they are designed to serve. Students who enter the program with a bachelor's degree complete a minimum of 60 points; those with a health or social science master's degree may be eligible for advanced standing with a corresponding reduction in course requirements. Following coursework there may be a language or statistics requirement depending upon the social science in which the student elects to concentrate. All students complete qualifying examinations in their social science area and in methods, health behavior, and health care systems. The dissertation topic, a public health problem or issue of interest to the student, is addressed using social science theories, concepts, and methods. Graduates of the program have typically been employed in academic positions either in social science departments or health professional schools, or have taken positions such as analyst or evaluation researcher in health planning agencies or consulting organizations.

SPECIAL PROGRAMS IN EPIDEMIOLOGY

Four special programs are available for predoctoral and postdoctoral training in epidemiology.

Cancer Epidemiology: This program provides training for research careers in the epidemiology of cancer. Trainees acquire both solid grounding in epidemiology and biostatistical methods and a thorough knowledge of cancer.

Epidemiology of Musculoskeletal Disorders: This program provides training for research careers in the epidemiology of diseases of the musculoskeletal system. The trainees acquire both a solid grounding in epidemiology and biostatistical methods and a thorough knowledge of a substantive area. Areas of concentration may include diseases generally managed by orthope-

dists, rheumatologists, or specialists in metabolic bone disease.

Neuroepidemiology: This program draws faculty members, trainees, and curricula from neurology, epidemiology, and other relevant disciplines. Advanced predoctoral and postdoctoral training is available. The topics covered in academic courses are epidemiology and biostatistics, neurology and neuroscience, and neuroepidemiology. Trainees with strong individual interests, such as human genetics, neonatology, or epilepsy, are encouraged to select concentrations as faculty strengths permit. Candidates may apply to a master's or a doctoral degree program in epidemiology.

Psychiatric Epidemiology: This program is intended to prepare professionals for careers in epidemiological research having to do with mental disorders. Trainees may have professional backgrounds in psychiatry, medicine, the behavioral sciences, or related fields. The duration of training depends on the individual's past experience and professional goals. The program is sponsored jointly by the Division of Epidemiology and the Department of Psychiatry. Candidates may have backgrounds in epidemiology and public health, the social and psychological sciences, and psychiatry. Candidates may register for a master's or a doctoral degree program in epidemiology, as well as for degree programs in related fields.

Courses of Instruction

The University reserves the right to withdraw, add to, or modify the courses of instruction or to change the instructors or scheduling at any time. The courses listed on the following pages are grouped according to the divisional affiliation of the course instructor. This provides a general guide to the perspective from which the course is taught. All courses are under constant review and revision.

A student may not drop or change courses without the approval of his or her academic adviser.

All changes in a student's program must be made in accordance with the regulations described in *Registration, Expenses, and Other Information—Changes in Programs of Study*.

Students whose primary registration is in a division of the University other than the School of Public Health must have the instructor's permission for all courses to be taken at the School of Public Health.

GRADES

The grading system is an A, B, C, F, Inc. system with limited pass/fail options. Grades of incomplete that remain one year from the time of the end of the course (grades due) are automatically converted to the grade F*.

Academic Standing

Students are expected to maintain satisfactory academic standing at all times. A student's work in individual courses and in the program as a whole is reviewed regularly by the Office of the Dean and the student's faculty adviser. In cases where a student's academic standing is in question, consideration is given to the circumstances, and a recommendation about continued enrollment, where appropriate, is made by the Committee on Academic

Standards appointed by the Dean. Normally, students with two or more grades of incomplete are not allowed to register for additional work. Students with failures are referred to the Committee on Academic Standards, where each case is considered after due process designated by the faculty.

Registration Credit

R credit indicates that a student has registered for a course and paid tuition, but that the student and instructor have agreed that no qualitative grade is to be assigned. Students wishing to obtain R credit must request the instructor's permission at registration and must establish with the instructor what course requirements, if any, must be met. Instructors, at their option, may deny permission to register for R credit. R credit may not be converted to a regular grade and may not be used for required courses. R credit will automatically be assigned to doctoral research instruction. In addition, one R grade may be used for course credit toward the Dr. P.H. degree. R credit may not be used as credit toward the M.P.H. or M.S. degree.

Reporting of Grades

After the close of each term a copy of the record of each student (listing courses and grades) is sent by the Registrar's Office to the student. A duplicate record (listing courses, grades, and instructor's comments) is sent at the end of each term by the administrative office of the School to the student's academic adviser. A list of all grades is posted, by student social security number and course number, at the close of each term. The grades of students with failures or incompletes are reported to the Academic Standards Committee.

Grievance Procedure

In the case of serious disagreement between a student and instructor concerning grades or comments, an *ad hoc* committee of three members will be appointed by the Dean of the School. The committee will consist of two members from the division offering the course and one member from another division. The committee will review the case with the instructor, and with the Dean when appropriate. The due process procedure from decisions of the Academic Standards Committee involves hearings, review by the Executive Committee, and final determination by the Dean.

KEY TO COURSE LISTINGS

Each course number consists of a capital letter followed by four digits.

The capital letter indicates the University division for whose students the course is primarily offered: A, Architecture, Planning, and Preservation; B, Business; C, Columbia College; E, Engineering and Applied Science; F, General Studies; G, Graduate School of Arts and Sciences; L, Law; P, Public Health; R, School of the Arts; T, Social Work; U, International Affairs; W, Interfaculty.

The first digit indicates the level of the course, as follows:

- 6 Graduate Course
- 8 Graduate course, advanced
- 9 Graduate research course or seminar

The second digit indicates the subject area of the course:

- 0 General public health
- 1 Biostatistics
- 2 Geriatrics and Gerontology
- 3 Environmental sciences
- 4 Epidemiology
- 5 Health administration
- 6 Population and family health
- 7 Sociomedical sciences

8 Tropical medicine

9 Doctoral research

The last two digits are course designations.

Term Designations

The academic year is divided into terms, each of about four months' duration: the autumn term, the spring term, and two summer terms of six weeks. Certain courses are given for half-term periods designated on the schedule available in the Dean's Office.

The letters *x*, *y*, or *z* indicate the term in which the course is usually offered; *x* indicates autumn term, *y* indicates spring term, and *z* indicates the summer terms.

Points of Course Credit

The number of points of credit that a course carries is given on the second line of the course listing.

DOCTORAL RESEARCH INSTRUCTION

Each candidate in the Dr. P.H. degree program must complete 10 points of Doctoral Research Instruction, under the conditions that are prescribed for him or her by the School, before submitting the dissertation. Doctoral Research Instruction must be undertaken at Columbia University. This requirement is met by registering for *Public Health P9980*.

GENERAL PUBLIC HEALTH

Public Health P6000

Perspectives in the history and philosophy of public health

2 hours a week. 3 points.

People, ideas, and institutions in the development of health care in various civilizations. Topics include concepts of disease and medicine in history; population and poverty; the founding of hospitals and asylums; industrialization, cities, and the sanitation movement; the rise of scientific

medicine; state intervention in public health; Social Darwinism, eugenics, and ideology; the birth control movement; the emergence of national health care systems; technology, environment and values.

Public Health P6001z

Perspectives in the history and philosophy of public health in the United States

2 hours a week. 3 points.

People, ideas, and institutions in the development of American health care. Topics include disease and social philosophy in early America; industrialization, medicine, and Jacksonian democracy; the sanitation movement; scientific medicine and Social Darwinism; race and eugenics; public health in the Progressive era; immigration, poverty, and the birth control movement; the struggle for a national health system; the environmental idea; health and feminism; the concern for rights; values in biomedicine.

Public Health P6002x or y

Medical background

2 hours a week. 2 points.

Credit for this course cannot be applied to the M.P.H. degree. Introduction to the understanding of health care, including concepts of disease and disability, methods of diagnosis and treatment, medical terminology and clinic practices, use of medical equipment, role and interrelationships of health practitioners. Exposure to various health care practice sites.

Public Health P6008z

Quality assurance in dentistry

Hours to be arranged. 3 points.

Public Health P6009

Health care communications: public service and marketing

3 hours a week. 3 points.

For health administration students interested in the use of communications tools to achieve marketing, public health, administrative, educational, or professional objectives within their health care organizations. Students will learn to develop communications program or to use communications tools to achieve marketing or other objectives.

Public Health P6010z

Educational interventions in the health care system

2 hours a week. 2 points.

The concept of health education in varied settings, such as the hospital, community,

school, and family. Role-playing simulation exercises introduce particular situations to assist in identifying points of educational intervention, and to stimulate discussion of educational needs, potentials, and approaches. In-depth study of selected educational strategies.

Public Health P6011x and y

Public health law

2 hours a week. 2 points.

Prerequisite: the instructor's permission. Lectures, seminars, and reports. An exploration of the legal aspects of public health enforcement and administration in a manner useful to the public health officer or other public health personnel.

Public Health P6031y

Demography health and manpower in the USSR

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Presented in cooperation with the Harri-man Institute. The background to the past, current and future structure; and trends in population of the USSR: historical demography and sources of information on population and manpower statistics, as well as health data, population and fertility, health status and mortality issues, nationality, age and sex, family and marriage, and economic characteristics of the population, including migration, labor force, and employment. Lectures combined with discussions of extensive statistical materials.

Public Health P8013z

Health education: training techniques and approaches

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Training activities for health organization and group development. The term begins by faculty members engaging students in training exercises, and moves toward students conducting the training. Enables students to identify principles underlying training for group and organization development, develop and adapt basic training techniques to health education settings, and conduct training exercises and utilize effective training approaches. Exercises, group work, lectures, audiovisual materials.

Public Health P8016y
Occupational hazards in the dental workplace

2 hours a week. 1 point.

Reviews the environmental risks incurred by dentists and by auxiliaries, including respiratory diseases, infectious diseases, overexposure to radiation and anesthetic gases, mercury, traumatic injuries, postural and cardiovascular damage, psychosomatic problems, hypersensitivity and allergic reactions, noise pollution, and malpractice. Appropriate preventive measures are discussed.

Public Health P8017y
Public health aspects of dentistry (an ambulatory care discipline in transition)

3 hours a week. 3 points.

Intended for the general health care provider; not limited to dentists. An introduction to dental health care within the context of an ambulatory-care discipline undergoing major change. Designed to broaden students' viewpoints concerning dentistry from that of a limited specialized service to an example of an ambulatory care discipline influenced by forces affecting the public health in general and ambulatory care in particular. Issues of economics, competition, changing patterns of disease, and manpower are stressed.

Public Health P8019x, y, or z
Master's essay in general public health
Hours to be arranged. 0 to 3 points.

A requirement for students in the general public health program, and an elective for students in other programs that do not require a master's essay. Students select a question, subject, or problem area, and under guidance gather and organize the information needed to identify and describe the issue clearly, review and analyze the collected data, draw conclusions, and prepare a written document which reflects substantive knowledge and critical thought. Work on the master's essay may span more than one term.

Public Health P8026
Ethics as applied to health care administration I

3 hours a week. 3 points.

Applies basic ethical principles to current problems in administrative decision-making. The material will cover ethical principles derived from Greek philosophy and

medieval thought, in order to enable students to understand and apply these principles in practice. Each segment of ethical thought will be tied to specific case presentations of current administrative problems which have ethical components. Health care journals which have focused on ethical issues will also be utilized, for both issues and cases. The seminar format will be used to explore the key administrative issues of survival of the institution.

Public Health P8027
Ethics as applied to health care administration II

3 hours a week. 3 points.

Students who have not taken Ethics I may be admitted upon permission of the instructor. Addresses the thought of twentieth-century ethicists, building on the base established in (I). Rawls, Ramsey, Niebuhr, Tillich, etc. will be used as they relate to current problems in administrative decision-making. Class format is similar to P8026.

Public Health P8050y
Seminar in public health and social work issues

2 hours a week. 3 points.

This is a required course for students in the M.P.H./M.S.W. joint program, team-taught by a faculty member from each of the two schools, to be offered in the fourth term of the M.S.W. degree program, at which time the joint-degree student will also be within a term or two of completing the Master of Public Health degree. The aim is to provide an opportunity to employ the skills of public health and social work in a common approach to a series of case problems and to strengthen the integration of content.

Public Health P8060
Ethical issues in health care organization

3 hour a week. 3 points.

Focuses on the ethics of administrative decision-making (rather than clinical issues) in health care organizations. Key issues to be explored are the allocation of resources (micro and macro), the use and non-use of technology, and the integrity/survival of the institution. Sources will be ethical writings of the past and present, specifically tied to case presentations. These pre-

sentations, followed by discussion, will highlight situations whose compassionate care and justice for individuals and groups are deeply affected by administrative, as opposed to clinical, decisions.

Public Health P8070

SIPA/SPH workshop on international health

Hours to be arranged. 1 point.

Focus will be on diverse factors influencing health and development. Workshop sessions utilizing panel discussions and case studies, and group projects by participants.

Public Health P6090, P8090, P9090x, y, or z

Tutorials in general public health

Hours to be arranged. 1 to 6 points.

Prerequisite: the instructor's permission. Tailored to the particular interests and needs of individual students, the tutorials take many forms—literature reviews, research projects, field trips, and other special studies or learning experiences. Their objective is to enrich the student's program. General public health subject areas for tutorials might include dental public health, health education, international health, nutrition, drug abuse, and other topical concerns not specifically dealt with in formal courses or in divisional or other study programs.

Public Health P8093x, y

Tutorial: social medicine

2 hours a week. 2 points.

Prerequisite: the instructor's permission. Public health students are invited to participate in the social medicine curriculum offered each Tuesday evening to the residents in family medicine and primary care of Montefiore Medical Center. The tutorial includes a series of six-week mini-courses on complementary and alternative therapies, human sexuality, health in Latin America, gay and lesbian health issues, the health issues of blacks in the U.S., advocacy and organizing, and racism and health. For public health students, a written "think piece" is required.

Public Health P6094, P8094y or z

Tutorials in dental health

Hours to be arranged. 1 to 6 points.

Individually arranged projects concerning dental care and public health.

BIOSTATISTICS

Public Health P6100x or y

Introduction to vital statistics

1½ lecture, 1½ laboratory hours a week. 1 point.

Mass data of the health fields; the content of vital statistics; methods of collecting, tabulating, and graphing data; elementary methods of analyzing some of the simpler types of data in terms of averages, percentages, and rates.

Public Health P6103x or y

Introduction to biostatistics

6 hours a week. 3 points.

This course satisfies the biostatistics core requirement for the M.P.H. degree. Mass data of the health fields; the content of vital statistics; methods of collecting, tabulating and graphing data; elementary methods of analyzing some of the simpler types of data in terms of averages, percentages, and rates. Summarization of experimental data by means of percentages, averages, and measures of variation; methods for evaluating chance variation as applied to percentages and averages; introduction to the concept of correlation.

Public Health P6104x

Introduction to biostatistical methods

6 hours a week. 4 points.

An enriched core course for biostatistics majors and other master's students who expect to take *Public Health P8100, P8120, P8129, or P8135*. It covers at greater depth all of the topics in *Public Health P6103*.

Public Health P6105x

Introductory probability with statistical applications

3 hours a week. 3 points.

Corequisite: *Public Health P6104*, and the instructor's permission. Intended for M.P.H. students concentrating in biostatistics and for other students likely to take advanced courses in biostatistics. Develops probability models for discrete and continuous variables, and illustrates their applications to inferences about contingency tables, to nonparametric problems, and to estimation using maximum likelihood.

Public Health P6110x, y, and z
Statistical and computer methods in health data

3 hours a week. 3 points.

Uses of the computer in cleaning, summarizing, and cross-classifying data. Expansion of the material covered in *Public Health P6103*—regression, correlation and contingency table analysis, and the analysis of variance—with data analysis carried out using standard statistical packages.

Public Health P8100y or z
Applied regression analysis

3 hours a week. 3 points

Prerequisite: *Public Health P6104* and the instructor's permission. The study of linear statistical models. Regression and correlation with one independent variable. Partial and multiple correlation. Multiple and polynomial regression. Single factor analysis of variance. Simple logit regression.

Public Health P8101y
Life-table methods in chronic disease

1 half-day a week. 2 points.

Prerequisite: *Public Health P6100* and the instructor's permission. Lectures and laboratory work. The conventional life-table and modified life-table methods in relation to the analysis of data accumulated over long periods of observation of individuals with chronic diseases.

Public Health P8102
Exploratory data analysis

3 hours a week. 3 points.

This course is suitable for master's and doctoral students from all disciplines whose research involves substantial data analysis. Techniques presented include graphical and numerical summaries of univariate and multivariate data, box-plot comparisons, quantile plotting, and transformations. Topics in regression analysis include examination of residuals, detection of influential observations, added variable plots, and model selection. Non-parametric curve fitting and exploratory techniques for the one-way analysis of variance will also be presented. Assignments will involve data analysis using standard statistical packages.

Public Health P8103
Quantitative decision-making in hospital management

2½ hours a week. 3 points.

Prerequisite: *Public Health P6104, P6530* and instructor's permission. Seeks to give the students an introduction to the major decision problems facing different levels of hospital management, and some of the quantitative methods and statistical techniques used to approach these problems. Actual cases will be used to illustrate both the problems and the solutions. The students should obtain a better ability to define management decision problems, to know what techniques are applicable to aid these decisions, and a beginning ability to apply some of the techniques. The course will consist of lectures by the instructor and invited speakers who have specific experience in selected areas, both supplemented by tours through relevant parts of the hospital. Students will be given homework exercises and a final examination.

Public Health P8108x or y
Analysis of longitudinal studies

1 half-day a week. 3 points.

Prerequisite: *Public Health P8101* or the equivalent, and the instructor's permission. More advanced treatment of the topics of *Public Health P8101*, such as clinical trials concerning chronic disease, comparison of survivorship functions, parametric models for patterns of mortality and other kinds of failures, and competing risks.

Public Health P8112x
Statistical methods in biological assay

1 half-day a week. 3 points

Prerequisite: *Public Health P8135* or the equivalent, and the instructor's permission. Estimation of relative potency for indirect assays with quantitative responses (parallel line and slope ratio) and with quantal responses (probits, logits); direct assays, Fieller's theorem.

Public Health P8115y
Sample survey theory

3 hours a week. 3 points.

Prerequisite: *Public Health P8135* or the equivalent, and the instructor's permission. Theory and practice of sampling populations. Simple random, stratified random, cluster, multistage, and systematic random sampling. Additional topics including optimal allocation, ratio and re-

gression estimation, balancing precision against cost, and sources of bias including nonresponse.

Public Health P8116y or z
Design of medical experiments
3 hours a week. 3 points.

Prerequisite: *Public Health P8135* or the equivalent, and the instructor's permission. Principles in the design and analysis of controlled experiments: Latin squares, incomplete block designs, crossover designs, fractional factorial designs, confounding.

Public Health P8117x or y
Nonparametric statistics
3 hours a week. 3 points

Prerequisite: *Public Health P6104* or the equivalent, and the instructor's permission. Presentation of statistical techniques valid for data from distributions requiring minimal assumptions. Topics include rank tests, permutation tests, contingency tables, rank correlation methods, analysis of variance and regression methods for ranked data, and methods of nonparametric survival analysis.

Public Health P8118x
Advanced topics in applied regression analysis
2½ hours a week. 2 or 3 points.

Prerequisites: *Public Health P8100* or *P8135* or matrix algebra and calculus, and the instructor's permission. Selecting the best regression equation. Multiple regression applied to the analysis of variance. Introduction to nonlinear regression. Special topics such as influential observations, inverse regression, ridge regression, principal components regression, robust techniques. Completion of about 10 homework assignments required.

Public Health P8120x or y
Analysis of categorical data
1 half-day a week. 3 points.
 Prerequisite: *Public Health P6104* and *P6400* or their equivalents, and the instructor's permission. A thorough study of the fourfold table, with applications to epidemiological and clinical studies. Significance versus magnitude of association; estimation of relative risk; matching cases and controls; effects, measurement, and control of misclassification errors; combining evidence from many studies.

Public Health P8121
Generalized linear models
2½ hours a week. 3 points.

Prerequisite: *Public Health P8135* and the instructor's permission. An examination of a generalization of the classical regression model. Topics include log-linear models for count data, probit and logit models, analysis of data with discrete ordered responses, and analysis of continuous data where the variability increases with the mean. Survival analysis and model checking are discussed as time allows. Weekly written homework based on use of conventional regression packages to analyze such data.

Public Health P8129x
Theory of multivariate analysis
4 hours a week. 4 points.

Prerequisite: *Public Health P8135* or the equivalent, and the instructor's permission. Thorough review of matrix algebra; inverses; orthonormalization; affine transformations; eigenvectors and eigenvalues. The multivariate normal distribution. Multivariate sampling distributions. The multivariate general linear model. Hotelling's T^2 .

Public Health P8133x or y
Sequential experimentation
2½ hours a week. 3 points.

Prerequisite: *Public Health P6105* and *P8135* or their equivalents, and the instructor's permission. An introduction to sequential analysis as it applies to statistical problems of clinical trials, hypothesis testing, selection, and estimation. Emphasis is placed on a study of procedures, operating characteristics, and problems of implementation, rather than mathematical theory. Students obtain an overview of currently available sequential designs and the advantages and disadvantages they offer in comparison with classical design. Requirements include weekly readings and some computer evaluation of operating characteristics (simulation or exact computation).

Public Health P8135y
Linear regression models
3 hours a week. 3 points.

Prerequisite: *Public Health P6105* and some computer background. The theoretical background underlying regression techniques. Simple regression. Bivariate normal distribution and correlation. Multiple and polynomial regression.

Public Health P8137x
Seminar on statistics in mental health research

1 hour a week. 1 point.

Prerequisite: The instructor's permission. This seminar is designed to give pre- and post-doctoral fellows in the Mental Health Statistics Training Program a forum for discussing the application of statistical models to mental health data. Students will take turns presenting research problems and plans for statistical analysis. Other students will serve as discussants during presentations. It is expected that students will learn how to apply statistical methods to real mental health data.

Public Health P8142y
Statistical issues in short-term drug trials

2½ hours a week. 2 or 3 points.

Prerequisites: *Public Health P8116* and the instructor's permission. Discusses statistical problems encountered in the evaluation of new drugs by means of short-term clinical trials. Statistical procedures to be discussed include bioassay, curve fitting in pharmacokinetics, concept of ED50 and LD50, and proving equivalence in bio-availability trials. Discussion of statistical issues in clinical trials will include the concept of a controlled clinical trial, ethical issues in randomization, and logistics of multicenter trials. Statistical techniques of particular relevance in such trials include the crossover design, and group sequential procedures to be used for early termination.

Public Health P8150x or y
Topics in applied statistics

2½ hours a week. 3 points.

Prerequisites: *Public Health P8135, Statistics G4107*, and the instructor's permission. This course will present some recently developed ideas in applied statistics including the EM algorithm; the jack-knife, bootstrap, and other resampling methods; model selection; and regression diagnostics.

Public Health P8151x or y
Methods of statistical adjustment

2½ hours a week. 3 points.

Prerequisite: *Public Health P6104* and the instructor's permission. A survey course intended to introduce students to the wide variety of techniques available for the statistical adjustment of data, with an emphasis on broad coverage rather than

depth. Students will learn about techniques for testing and estimation with covariate adjustment including stratification, matching, direct and indirect standardization of rates, analysis of covariance and other multiple regression models, log-linear and logistic regression models, conditional likelihood methods, piecewise exponential, and Cox regression models in survival analysis.

Public Health P8154y
Discrete statistical analysis

3 hours a week. 3 points.

Prerequisite: *Statistics G4105* and *G4107*. Discrete univariate and multivariate distributions; sampling models for discrete data; maximum likelihood and best asymptotically normal estimation; asymptotic behavior of goodness of fit statistics; homogeneity of association, and symmetry in multiway contingency tables.

Public Health P9102y
Statistical analysis in human genetics

3 hours a week. 3 points.

Prerequisite: the instructor's permission. Research and analytic methods for the elucidation of the role of genetic factors in various human traits and diseases. Heritability, major gene versus polygenic inheritance, segregation and pedigree analysis, linkage analysis, polygenic threshold models, morbidity risk, and path analysis.

Public Health P9103
Psychometric theory

2½ hours a week. 3 points.

Prerequisite: the instructor's permission. Classical test theory: true and error scores, measures of reliability and validity, composite tests. Modern test theory: parallel versus tau-equivalent measures, generalizability theory, logistic test models. Applications of factor analytic methodology.

Public Health P9104y
Advanced multivariate techniques and applications

4 hours a week. 4 points.

Prerequisite: *Public Health P8129* or the equivalent, and the instructor's permission. Multivariate analysis of variance. Discriminant function analysis. Canonical correlation analysis. Principal components and factor analysis. Analysis of covariance structures. Applications to health data.

Public Health P9105y**Topics in the analysis of longitudinal studies***2 hours a week. 3 points.*

Prerequisite: *Public Health P8108* or the equivalent, and the instructor's permission. Seminar for advanced students planning to pursue doctoral work in this area. Reading of recent articles of theoretical and practical importance for the planning and analyzing of long-term longitudinal studies. Lectures, discussions, presentations by students.

Public Health P6190, P8190, P9190x, y, or z**Tutorials in biostatistics***Hours to be arranged. 1 to 6 points.*

For appropriately qualified students wishing to enrich their programs by undertaking literature reviews, special studies, or small group instruction in topics not covered in formal courses.

ENVIRONMENTAL SCIENCES**Public Health P6300x, z**
Environmental sciences*3 hours a week. 3 points.*

Satisfies the environmental sciences core requirements for the M.P.H. degree. An introduction to preventive health practices with an emphasis on environmental factors. Review of basic concepts in biomedical sciences as they relate to disease causation. Toxicology, especially carcinogenesis, is stressed. In cooperation with other divisions, tropical diseases and the implications of population growth are discussed. Available techniques of preventive practices, such as controlling the quality of air, water, and consumer products, are described for both the workplace and the general environment. Lectures are followed by discussion groups. Examinations.

Public Health P6301x**Environmental science applications, I***2 hours a week. 1 point.*

Primarily for students specializing in environmental sciences. Discussions with faculty and leading practitioners of preventive health programs, including labor, industry, and government. Various roles, professional problems, employment opportunities, and current trends in the field of environmental sciences. Attendance and participation.

Public Health P6302x**Biochemical basis of environmental sciences***2 hours a week. 3 points.*

Basic concepts of biochemistry essential for understanding processes of carcinogenesis, mutagenesis, and other cell transformations, including bioengineering. Examines organization of cell, structure of proteins, energy metabolism, material transport, hormones, nucleic acids, chromosomes, genes, viruses, computer analysis, and related topics. Provides preparation for advanced toxicology courses. Lectures and examination, or may be taught as tutorial.

Public Health P8302x**Environmental science workshop, I***3 hours a week. 3 points.*

Intensive survey of key literature, analytical techniques, and fields of knowledge encompassed by environmental science subspecialties, particular toxic material management and occupational health. Stress on research methods and techniques of research paper writing. Topics include environmental policy analysis, and formulation, economics, risk assessment and management, and the environmental health problems related to energy development and similar technological growth areas. Weekly essays.

Public Health P8303y**Environmental science workshop, II***2 hours a week. 3 points.*

Primarily for students specializing in environmental sciences. Prerequisite: *Public Health P8302* and the instructor's permission. Continuation of *Public Health P8302*. Research paper.

Public Health P8304y**Environmental science applications, II***2 hours a week. 1 point.*

Primarily for students specializing in environmental sciences. Continuation of *Public Health P6301*. Research paper.

Public Health P8306y**Environmental hygiene***2 hours a week. 3 points.*

Primarily for students specializing in environmental sciences. Prerequisite: the instructor's permission. Field measurements of environmental pollutants. Theoretical concepts utilized for instrumentation and techniques of practical application. Field

exercises. Evaluation of environmental monitoring data. Examination and paper.

Public Health P8308x

Molecular toxicology

2 hours a week. 3 points.

Prerequisite: knowledge of organic chemistry and the instructor's permission.

Chemical and biochemical principles governing toxicity of environmental pollutants, particularly carcinogens. Significance of entry route, dosage, tissue distribution, time course, metabolism, excretion, cellular action, host susceptibility factors, and assays. Applications to practical situations described by guest lecturers from industry and government. Report and final examination.

Public Health P8311y

Industrial toxicology

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Systematic study of major families of industrial chemicals and physical hazards, such as electromagnetic radiation. Basic mechanisms and toxic effects. Environmental examples of exposure. Study questions and two essay examinations.

Public Health P8312x

Systemic toxicology

2 hours a week. 3 points.

Introductory toxicology course that uses an organ-system approach to the study of possible negative actions by environmental agents impacting upon the human organism. Systemic sites of injury and toxicological mechanisms of action are stressed. Topics include basic principles of toxicology and relevant aspects of anatomy, physiology, histology, and pathology. Lectures with discussions. Mid-term and final written examinations.

Public Health P8314x

Community noise

2 hours a week. 2 points.

Prerequisite: the instructor's permission. Physics and psychology of sound. Definition and significance of community noise problems. Physiology and measurement of hearing. Physiological effects and control of noise. Examination.

Public Health P8351y

Occupational medicine workshop

Hours to be arranged. 3 points.

Prerequisite: instructor's permission. Covers the latest advances in occupational medicine combined with practical experi-

ence in the field. Review of recent literature, analysis of cases and participation in research projects involving occupational medicine surveillance and evaluation.

Public Health P9301x

Law of toxic substances

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Laws and regulations governing production, use, and disposal of toxic substances in the U.S. Principles and practices of regulatory law as it applies to toxic substances and the evaluation of the enforcement system. Focus on current issues.

Public Health P9303x

Management of hazardous wastes

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Definition, classifications, and nature of hazardous and toxic wastes. Storage, transportation, treatment, and disposal techniques proposed and being supplied. Includes chemical and biological treatment, incineration, and land burial. Environmental implications. Paper/examination.

Public Health P9305y

Ethical issues in occupational/environmental health

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Covers areas of current interest in occupational and environmental health that raise significant ethical issues, such as genetic screening in the workplace, cost-benefit analysis in standard setting, and the right to know. Purpose is to increase awareness of the ethical problems in this field and to provide a framework for analysis of these problems. Class presentations and papers.

Public Health P9307

Occupational medical management

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Provides occupational health professionals with a background in management and business administration. Covers microeconomics finance, management, organizational behavior, personnel and human resources, labor relations, and corporate structure and activity. Class presentations and papers.

Public Health P9312y

Industrial hygiene practice

3 hours a week. 3 points.

Prerequisite: the instructor's permission. Recognition, evaluation, and control of

chemical, physical, and biological stress within the occupational environment. Principles and practice of air sampling, methods of calibration, collection media, analytical methods, use of direct-reading instruments, and interpretation of data. Field exercises with reports. Examinations.

Public Health P9314x

Environmental sciences laboratory

4 hours a week. 2 points

Prerequisite: *Public Health P8306* or the equivalent, and the instructor's permission. Introduction to laboratory procedures for analysis of chemical, physical, and biological agents in environmental media. Practical experience with atomic absorption, infrared and ultraviolet spectroscopy, gas chromatography, gravimetric analysis, sound measurement, pump calibration for air sampling, measurement of bacterial contamination of food, air, and water, biological and chemical oxygen demand, Ames Assay, and RIA. Student group or individual projects.

Public Health P9315x

Occupational medicine, I

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Introduction to the practice of occupational medicine. Topics include the roles of medical departments in corporations, clinical and administrative responsibilities, health screening, wellness programs, epidemiological studies, data management, risk assessment management, legal and ethical issues, and related subjects. Exploration of interfaces with associated professions, such as occupational health nursing and industrial hygiene, and with academic institutions. Examination.

Public Health P9316y

Occupational medicine, II

3 hours a week. 3 points.

Prerequisite: the instructor's permission. Clinical, managerial, and preventive aspects of contemporary occupational medicine practice and needs. Lectures and group discussions with industrial medical directors, labor organizations, and governmental agencies in the New York City region. Field trips. Research paper.

Public Health P9317y

Case studies in risk assessment and environmental policy

3 hours a week. 3 points.

Prerequisite: the instructor's permission. The scientific basis for recent government decision making on major environmental/public health issues. Specific aspects include the process of risk assessment and policymaking, limitations of available scientific data, and the "political" component of decisions using case studies of issues, such as air and water pollutant standards, vinyl chloride and formaldehyde regulations, and acid rain. Seminar. Research paper.

Public Health P9320y

Water resources and public health

2 to 3 hours a week. 3 points.

Prerequisite: the instructor's permission. Introduction to public health issues involving water resources management, particularly in the Northeast U.S. Topics include biological and chemical aspects of water quality, sources of pollution, treatment, health considerations, regulatory standards, planning, and economic factors. Seminar with guest lecturers, field trips, textbooks, and student presentations.

Public Health P9321

Perspectives on biological effects of radiation

3 hours a week. 3 points.

Lecture survey of sources, applications, risks, and control of environmental radiation. During the first half of course, physical bases of radiation are reviewed; and the second half focuses on (1) biological effects of radiation and (2) radiation safety. Field trips to Brookhaven National Laboratory and the Sloan-Kettering Cancer Center. Midterm examination and short research paper.

Public Health P6390, P8390, P9390 **Tutorials in environmental health sciences**

Hours to be arranged. 1 to 6 points.

Prerequisite: the instructor's permission. Tailored to the particular interests and needs of individual students. They may take many forms—literature reviews, laboratory experiments, field trips, special studies, or other learning experiences that enrich and contribute to the student's program.

EPIDEMIOLOGY

Public Health P6400x, y **Principles of epidemiology, I**

3 hours a week. 3 points.

Satisfies the epidemiology core requirements for the M.P.H. degree. Prerequisite: for students who are not M.P.H. candidates, the instructor's permission. Prerequisite or corequisite: *Public Health P6100*, and *P6103* or *P6104*. The concepts, principles, and uses of epidemiology. Epidemiologic analysis of the determinants of health and disease. Study of particular diseases to illustrate the descriptions of their distributions and courses, the analysis of their causes, and approaches to prevention and control. In the main, teaching is in autonomous small-group seminars. Research paper, examination, and student participation. Lectures, seminars, and exercises.

Public Health P6427 **Medical microbiology in the public health I**

2 hours a week. 1 point.

Medical microbiology principles, terminology, and research methods are introduced through lectures, readings, and a field trip, with emphasis upon the relevance of the material to the public health. Topics include organism taxonomy/morphology, immunologic principles, genetic and viral cancer models, bacterial viral mutation, and laboratory diagnostic methods. No prior background in medicine or biology is required. Evaluation is by final examination and a term paper or class presentation.

Public Health P8400y **Principles of epidemiology, II**

3 hours a week. 3 points.

Primarily for students specializing in epidemiology. Prerequisites: *Public Health P6400*, *P6104*, and *P8438*. An advanced-level epidemiology course with its main emphasis on principles and methods of inference. Epidemiologic concepts, such as confounding, interaction, and misclassification, will be covered in detail, both in theory and practice. Strategies to strengthen inference from epidemiologic studies will be discussed, although the emphasis will be on analytic methods rather than design options. Standardization, stratified analysis, and multivariate analysis will be covered in considerable detail in their conceptual application. This course is recommended for students who want to

acquire a strong grounding in epidemiologic theory. Although many topics in this course are algebraic or statistical, advanced mathematical background is not necessary. Students, however, should be comfortable with numbers and abstract thinking. There will be weekly readings and exercises, a 1-hour midterm exam, and a 3-hour final exam. Short quizzes will be given from time to time. A paper of 4–5 pages on a methodological issue is optional.

Public Health 8401 **Principles of pharmacoepidemiology**

3 points.

Prerequisite: *Public Health P6400*, and a strong background in a biological science. An introduction to the history and basic methodology of pharmacoepidemiology. The student is expected to acquire an understanding of the epidemiologic methods applicable to the study of the efficacy and adverse effects and use of pharmacologic agents. The uses of the case-control study and of the larger automated patient databases are covered. Each class consists of a two-hour seminar based on assigned readings. A term paper is required.

Public Health P8405x **Genetics in epidemiology**

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Genetic issues in epidemiology and public health, with emphasis on biological and clinical aspects of genetics in public health, community-based programs to prevent genetic disease, and the investigation and interpretation of familial aggregation in complex diseases. Topics include screening for genetic disease, monitoring environmental impacts on reproduction and on the genome, twin studies, segregation and linkage analysis, and epidemiologic methods for detecting familial aggregation. Term paper or the equivalent required.

Public Health P8406y **Epidemiology of communicable diseases**

3 hours a week. 3 points.

Prerequisite: *Public Health P6400* or the instructor's permission. Study of the epidemiology of communicable diseases of national and worldwide importance. The emphasis is on the methodology used in the investigation of these diseases and on evaluation of control programs. Through

exercises, students will have the opportunity to apply these methods to specific health problems. Exercises, exam, and paper required.

Public Health P8409x, y
Supervised teaching assistance

Hours and points to be arranged.

Prerequisite: the satisfactory completion of the course being taught and the instructor's permission. Participation in teaching as the need arises, under the direction of the faculty member responsible for the course.

Public Health P8410x

Reading seminar in psychiatric epidemiology, I

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Reading and discussion of selected works on the relationship between sociocultural factors and psychiatric disorders. Emphasis is on public attitudes, selection factors into treatment, and treatment evaluation. Special emphasis is placed on problem formulation. Students learn to generate research problems through a careful consideration of available literature. Lectures and discussion along with symposia to develop and defend a position on a current controversy in psychiatric epidemiology. A short paper (5 to 15 pages) on symposia topic and a take-home examination.

Public Health P8411y

Reading seminar in psychiatric epidemiology

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Reading and discussion of selected works on relations between sociocultural factors and psychiatric disorders in the areas of prevalence, public attitudes, clinical diagnosis, etiology, and treatment.

Public Health P8414

Cancer epidemiology

2 hours a week. 3 points.

(Continuing education credits: 2 points a session.)

Prerequisite: *Public Health P6400*, and a course on methods in epidemiology and the instructor's permission. Molecular and cellular biology of cancer and basic mechanisms of carcinogenesis. Role of chemical, viral, radiation, and genetic factors in human cancer. Sources of cancer patient data with emphasis on acquisition and management of data for clinical and epidemiologic

research. Natural history of cancer with analysis of time trends in cancer incidence, mortality, survival, and geographic distribution. Role of environmental factors (ecological/industrial/occupational) in cancer causation. Fundamental issues in cancer screening and applications to public health and medical practice. Lectures and discussions. Assigned readings and term paper.

Public Health P8417y

Selected problems of measurement in epidemiology, I

2 ½ hours a week. 3 points.

Prerequisites: *Public Health P6104, P6400*, or equivalents and the instructor's permission. Introduction to measurement theory and the concepts of reliability and validity. Methods and development of assessing the quality of measurement in epidemiologic research. Special emphasis is placed on the consequences of measurement error for interpreting causal inferences concerning the effect of an exposure on a health outcome. Lectures, discussions, homework assignments, and a final exam.

Public Health P8419

Genetic epidemiology in psychiatry

2 hours a week. 3 points.

Familial aggregation and transmission of psychiatric disorder are established empirical findings. The methodology to characterize and quantify such family clustering is described, as are methods to evaluate the environmental and genetic components of family clustering. While substantive findings are described, the emphasis is on methodological issues including study designs, use of appropriate controls, and valid inference. Guidelines for the evaluation of existing studies and the planning of future studies are developed.

Public Health P8421

Clinical seminar for psychiatric epidemiology

2 seminar hours a week. 3 points.

Prerequisite: the instructor's permission. For nonclinicians being trained in psychiatric epidemiology to familiarize them with the major psychiatric clinical entities. Students are familiarized with DSM III and relevant issues concerning diagnosis. Special clinical topics are developed concerning childhood psychopathology and geriatric psychiatry.

Public Health P8422y**Perinatal epidemiology***3 hours a week. 3 points.*

Prerequisites: *Public Health P6100, P6103, P6400*, or the equivalents and the instructor's permission. A seminar on the events in the perinatal period both as outcomes of interest and as influences on child development. Emphasis on issues of measurement and study design and the weighing of epidemiologic evidence.

Public Health P8425x**Quasi experimentation in epidemiology: design and analysis issues***2½ hours a week. 3 points.*

Prerequisite: the instructor's permission. Principles of nonexperimental research design. Problems in defining and sampling from study and control groups; the uses and limitations of matching, stratification, and the analysis of covariance in nonexperimental research; the effects of unreliability and invalidity of measures on causal assertions made in nonexperimental designs.

Public Health P8426z**Assessment of adult psychopathology***2 hours a week. Lecture, 4 hours supervised interviewing. 3 points.*

Prerequisite: the instructor's permission. Introduction to four standardized methods of assessing psychopathology in adults: the Present State Examination (PSE), the Schedule for Affective Disorders and Schizophrenia (SADS), the Psychiatric Epidemiology Research Interview (PERI), and the Diagnostic Interview Schedule (DIS). The strengths and weaknesses of the instruments for use in populations surveys are emphasized. The relationship of diagnosis obtained using structured interviews is compared to that obtained using the standard clinical interview in psychiatry. Students gain literacy in the four instruments and in DSM-III terminology and classification and have the opportunity to work with one instrument with a psychiatric patient.

Public Health P8427x**Medical microbiology in the public health II***2 hours a week. 2 points.*

P8427 is a continuation of P6427, and includes a field trip. Grading is by final examination and a term paper or class presentation.

Public Health P8432y**Environmental epidemiology***2 hours a week. 3 points.*

Prerequisites: *Public Health P6400 and P6104*. A selected research topic in environmental epidemiology is discussed in depth each week, along with assigned readings. Specific emphasis is given to exposure assessment, endpoint definition and measurement, and research methodology. Relevance of environmental epidemiology to risk assessment and public policy is discussed. Requirements: seven brief papers consisting of a critical evaluation of research papers from the weekly assignments.

Public Health P8435y**Design and conduct of observational epidemiologic studies of acute diseases***3 hours a week. 3 points.*

Prerequisites: *Public Health P6400, P6104*, or *P6103*. Theoretical and practical aspects of designing and conducting epidemiologic studies of acute diseases. Emphasis on infectious diseases and acute toxicologic problems. Course material based on actual case studies.

Public Health P8438y**Design and conduct of observational epidemiologic studies of chronic diseases***3 hours a week. 3 points.*

Prerequisite: *Public Health P6400* or the equivalent and *Public Health P6104* or the equivalent. Aim is to provide students with the knowledge and skills necessary to design, carry out, and interpret observational epidemiologic studies of chronic diseases. Topics include epidemiologic concepts, sources of data, prospective cohort studies, retrospective cohort studies, case-control studies, cross-sectional studies, methods of sampling, estimating sample size, questionnaire design, and effects of measurement error. Lectures and discussion, with required readings and exercises for each session. A short paper on a methodologic topic is required. Evaluation is based on the exercises and paper.

Public Health P8440x**Epidemiology of cardiovascular diseases***3 hours a week. 3 points.*

Prerequisite: *Public Health P6400* or the equivalent. An overview of current epidemiologic knowledge of cardiovascular diseases (CVD), including coronary heart

disease, stroke, and hypertension, with the aim of providing familiarity with the scope and magnitude of the CVD problem, a working knowledge of the major and minor risk factors for the various manifestations of CVD, and an appreciation for the methodologic problems encountered in cardiovascular epidemiologic research. Lectures, presentations by invited speakers, and student presentations. Students are evaluated on (1) a short class presentation, (2) a brief review paper, and (3) an examination.

Public Health P8445x

Using microcomputers in epidemiologic research

3 hours per week. 2 points.

Prerequisite: the instructor's permission. Gives the student involved in field research a thorough understanding of state-of-the-art microcomputer products and their application to epidemiologic research. Special emphasis will be placed on statistical analyses, project budgeting, planning, monitoring, and evaluation. The course will focus on the use of database management systems for microcomputers. Students will have access to available microcomputers.

Public Health P8450

Topics in the epidemiology of musculoskeletal disorders

2 hours a week. 2 points.

An overview of the current state of knowledge of the epidemiology of selected disorders of the musculoskeletal system. Both substantive and methodological issues will be covered. Individual topics will be presented by both faculty and students. A term paper is required.

Public Health P9400y

Principles of epidemiology, III

3 hours a week. 4 points.

Prerequisites: *Public Health P6400* and *P8400* (or equivalent) and instructor's permission. Intensive case studies involving the application of epidemiologic principles, with special emphasis on causal inference and judgments. All students prepare a succinct review of the case for each class. The case is placed in context by the instructor, is presented by at least two students, and is discussed by the class.

Public Health P9406x

Research topics in the epidemiology of selected communicable diseases

Hours and points to be arranged.

Prerequisite: the instructor's permission.

A research topic within the competence and interest of the instructor is developed in tutorial session. The research assignment for the student may take the form of a critical review or a fresh analysis of existing data.

Public Health P9419

Master's essay in epidemiology

Hours to be arranged. 3 points.

A master's essay is required for both the M.P.H. and the M.S. degrees with a concentration in epidemiology. The essay may represent empirical research, a fresh analysis of existing data, or a theoretical treatise. The student develops a proposal in consultation with a faculty adviser. The essay is to be completed during the last term of study, under the supervision of the adviser. M.P.H. students may undertake the essay in conjunction with the practical experience. Two faculty members, with the adviser as chairman, review the master's essay.

Public Health P9442x

Selected problems of measurement in epidemiology, II

2½ hours a week. 3 points.

Prerequisite: *Public Health P8417* or equivalent experience or the instructor's permission. Focus on special problems of measurement.

Public Health P9446

Fellow-faculty seminar in psychiatric epidemiology

2 hours a week. 1 point.

Prerequisite: the instructor's permission. Primarily for fellows in the Psychiatric Epidemiology Training Program. Presentation and discussion of ongoing faculty and fellow research plus guest speakers. Designed to provide constructive criticism of research in progress and to make fellows aware of current issues in psychiatric epidemiology.

Public Health P9480x, y

Epidemiology colloquium

1½ hours every other week. One-half point each term.

Primarily for students with a concentration in epidemiology. Others welcome. Presentations on completed and ongoing

research by faculty, invited speakers, and postdoctoral and pre-doctoral students. Exchanges on study design, data collection, and analysis and interpretation.

Public Health P6490, P8490, and P9490

Tutorials in epidemiology

Hours to be arranged. 1 to 6 points.

Prerequisite: the instructor's permission. Tailored to the particular interests and needs of the individual student. May include literature review, research projects, field trips, or other special studies that enrich the student's program.

Public Health P9493y

Topics in epidemiology of neurological disorders

2½ hours a week. 3 points.

Prerequisite: the instructor's permission. Epidemiology of selected neurological disorders, including stroke, epilepsy, multiple sclerosis, motor neuron disease, myasthenia gravis, muscular dystrophy, primary brain tumor, Parkinson syndrome, dementia, and presumptive slow virus diseases. Paper and examination.

GERIATRICS AND GERONTOLOGY

Public Health P6230x

Overview of geriatrics and gerontology

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Required for Division majors. Jointly sponsored by the School and the Center for Geriatrics and Gerontology. Research and practice in geriatrics and gerontology are reviewed, including the demography and epidemiology of aging as well as biological, social, medical, psychological, and psychiatric factors that influence the aging process; the problems that develop in aging; and the manner of treating and caring for the aged.

Public Health P6240y

Overview of long-term care

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Required for Division majors. Introduction to the body of research addressing the needs of persons requiring long-term care and the systems and services available to meet those needs. Emphasis is placed on the continuum of long-term care, with a focus on community-based services within

the continuum. Institutional services and informal supports are also reviewed.

Public Health P8219x, y, z

Master's essay in geriatrics and gerontology

Hours to be arranged. 0 points.

Required of M.P.H. students in this division. Registration for the Master's Essay in Geriatrics and Gerontology occurs concurrently with registration for the student's last course(s) in the program. The student does a four-month (full-time) practicum (arranged through the Division's Practicum Coordinator), after which the essay, based on the practicum, is written. It follows the form of a scientific paper insofar as possible. The quality of both content and style are judged by the student's adviser and the Practicum Coordinator. There is no separate registration for the practicum; an incomplete in the Master's Essay registration is carried until its completion (one year allowed).

Public Health P8220z

Long-term care management and administration

4 hours a week. For 6 weeks. 3 points.

Required for Division majors. An analysis of the functions and responsibilities of long-term care administrators in institutional and community-based programs and their relationship to regulatory requirements and service provision.

Public Health P8222z

Long-term care policy

4 hours a week. For 6 weeks. 3 points.

Required for Division majors. An overview of health and social service legislation which directly or indirectly affects the scope and utilization of long-term care programs and services.

Public Health P8224z

Long-term care programming and planning

4 hours a week. For 6 weeks. 3 points.

Required for Division majors. An analysis of federal and state programming requirements and program development implementation and evaluation methods in institutional and community settings.

Public Health P8228z

Regulation and financing of long-term care

4 hours a week. For 6 weeks. 3 points.

Required for Division majors. An analysis

of state and federal regulatory codes and reimbursement systems and their influence on the type and quality of community-based and institutional long-term care services available to the elderly.

Public Health P8230y

Assessment of intellectual, emotional, and physical change in the older adult
2 hours a week. 3 points.

Prerequisite: the instructor's permission. Required for Division majors. Designed to provide a systematic review of strategies for the assessment and eventual diagnosis of mental, physical, and social problems of older people. Reviews instruments for assessment and examination of the underlying principles of these instruments in relation to various disorders. Videotapes of interviews with older people are used for developing participants' skills in the use of assessment tools.

Public Health P8233y

Processes of aging

2 hours a week. 3 points.

The primary emphasis is on biological and psychosocial aspects of normal people in the third trimester of life. An attempt is made to consider these aspects from a cultural basis. Experts in particular fields present guest lectures, and, as often as possible, classes include older subjects who introduce the day's topic and give some perspective.

Public Health P8235x

Care-giving and related transitions in midlife and older women

2 hours a week. 3 points.

Prerequisite: the instructor's permission. This course provides health care professionals with information necessary to interpret and utilize research findings for purposes of assisting care-givers of the elderly to deliver services to them. Families, specifically elderly wives and middle-aged daughters and daughters-in-law, bear 80 percent of the costs of delivering services to the elderly. There is a large and growing literature on the impact of care-giving on families and older women as well as on supports and services (including teaching techniques and resources) to enable them to carry out care-giving in the most efficient and effective ways possible.

Public Health P8238x

Longevity

2 hours a week. 3 points.

This course presents research findings and their implications for policy and clinical interventions with respect to four aspects of longevity: average life, active life, quality of life, and lifespan. Determinants and consequences of longevity are discussed from the viewpoints of biology, genetics, health care, life style, psychosocial factors, culture, and ethics. Projections over the next few decades are examined for likely challenges and solutions.

Public Health P8240y

Mental health of the aged

2 hours a week. 3 points.

This course provides to a spectrum of health care professionals the skills to interpret and utilize research findings for the purposes of planning, organizing, administering, and delivering services to the aged population in order to alleviate the personal, organizational, and societal consequences of mental ill health and related physical and social problems; and for the purposes of reducing the frequency of such problems through preventive intervention.

Public Health P6290x, P8290y, P9290z

Tutorial in geriatrics and gerontology

Hours to be arranged. 1 to 6 points.

Individual projects in Geriatrics and Gerontology. Arranged with faculty of the Division.

Public Health HP8500x

Interdisciplinary collaboration in long-term care: A seminar and practicum.

2 hours a week. ½ day a week of field placement. 3 points.

Prerequisite: the instructor's permission. Required for Division majors. Sponsored jointly by the Division of Geriatrics and Gerontology and the programs in Occupational Therapy, this course helps students develop an integrated approach to professional problem-solving. Opportunities to examine models of long-term care and to practice skills for effective interdisciplinary collaboration are provided. Emphasis on applied learning and group process. Students of different disciplines are paired for field placements.

Public Health HP8510y**Methods of teaching in health care (the adult learner)***2 hours a week. 2 or 3 points.*

Prerequisite: the instructor's permission. Models of curriculum design and learning theories applicable to learners with differing backgrounds and levels of preparation. Development of specialized learning modules for use in academic and/or health care settings along the continuum of care. Opportunities for practice and evaluation of teaching strategies: the case-study method, role plays, audiovisual aids, problem solving.

HEALTH ADMINISTRATION**Public Health P6503x or y****Introduction to health economics***3 hours a week. 3 points.*

Prerequisite: a basic economics course. The development of economic analysis and its application to topics in the field of health and medical care, structured to provide an understanding of basic economic concepts and tools being used to shape, evaluate, and regulate the varied components of the health field, offering an analytical approach to problem solving with broad application to areas of social concern.

Public Health P6513y or z**Hospital organization and management***3 hours a week. 3 points.*

Administrative elements of hospital functions, including background and theoretical concepts, and opportunities for examination and open discussion of the issues and problems of hospital management. The approach is from the general to the particular, to provide students with a workable overall knowledge of hospital organization as well as more particular insight into certain typical and key departments.

Public Health P6514z**Legal aspects of hospital administration***2 hours a week. 3 points.*

Responsibilities entailed in admission of patients; negligence liability for acts by nurses, doctors, students, and employees; medical malpractice; unauthorized operations; loss of valuable personal property of patients; licensure.

Public Health P6515y or z**Politics of health administration and planning***3 hours a week. 3 points.*

The political and policy aspects of health care delivery in the U.S. Lectures, readings, and case studies illustrating representative issues, and case-study discussions.

Public Health P6517z**Legal aspects of health services administration***2 hours a week. 2 points.*

Prerequisite: the instructor's permission. Legal responsibilities and liabilities in relation to consumers and providers of health services. Topics include licensure, malpractice, negligence, and death.

Public Health P6518y**Health care facilities planning***3 hours a week. 3 points.*

Concepts, terminology, cost factors, design techniques, regulatory standards, budgeting, sources of capital financing associated with long-range planning, programming, designing, financing, and building of health facilities.

Public Health P6520x**Perspectives in ambulatory care***3 hours a week. 3 points.*

Provides an overview of organized ambulatory care programs in the United States; provides a framework for comparing ambulatory care programs; and gives an overview of policy, planning, and administrative issues in ambulatory care. Seminar format.

Public Health P6525y or z**Government regulation of health care***2 hours a week. 2 points.*

Prerequisite: the instructor's permission. Government regulation of health care delivery organizations. Major foci on reimbursement and licensure regulations. Emphasis on a legal analysis of the present state and visible trends of these types of regulations as they interact with short-term general hospitals.

Public Health P6527z**Health needs assessment***2 hours a week. 3 points.*

Prerequisite: the instructor's permission. Readings, discussions, and projects on determining health care needs and health care demand as a basis for program planning and evaluation.

Public Health P6530y and z
Issues and approaches in health administration

3 hours a week. 3 points.

Satisfies the core requirements for health administration. Lectures and readings on administrative problems and interventions which affect, and are affected by, all public health practitioners, as they seek to improve health-care delivery, health care, and the health status of populations.

Public Health P6532z
Personnel administration and labor relations

3 hours a week. 3 points.

Prerequisite: the instructor's permission. Recruiting, retaining, and motivating employees; performance appraisal; legislation and current behavioral science methodology. Unionization of health personnel in all areas and the effect on health facilities, management, rights, grievances, policies, and practices.

Public Health P6536y
Strategic planning in health care institutions.

3 hours a week. 3 points.

Objective is to explore both the process and the product of the strategic planning of health care institutions, including the organization of the planning process, its staffing, the use of consultants, community participation, and the regulatory response. Elements are devoted to the development of a planning data base, goals, master facilities program and plan, certificate of need, and project implementation. Exploration of the institutional decision-making process, value analysis, demographic community need, institutional marketing, and capital funding, including case studies as well as presentations by specialty consultants and institutional representatives.

Public Health P6538
Current issues in mental health planning and administration

3 hours a week. 3 points.

Designed to increase the student's knowledge and understanding of contemporary administrative, policy, and planning issues in mental health. The objectives are: 1) to provide a framework for understanding the planning, organization, and delivery of mental health services in the United States today; 2) to provide an overview of the current mental health care delivery sys-

tem; 3) to develop the student's analytical skills in problem solving with regard to current issues in the mental health care system.

Public Health P6540x
Dynamics of health planning administration

3 hours a week. 3 points.

Primarily for students whose area of concentration is health planning. Prerequisite: the instructor's permission. Introductory course. Translation of health planning theory and legislation into techniques of health planning in use today in health planning agencies. Readings, lectures, and group discussions.

Public Health P6544x and y
Health care financial management, I

2 hours a week. 3 points.

Prerequisite: basic accounting or an understanding of the topics covered in such a course. The study of the principles of finance and their application to typical problems in health care institutions. Course topics will include valuation and its application to leasing, debt services, capital asset pricing and long-term financial planning, and reimbursement maximization. Students can expect to attain a familiarity with: 1) evaluation and resource allocation aspects of financial management; (2) specific analytic methods commonly used in financial analysis; (3) computer models which facilitate analysis.

Public Health P6550
Nursing services planning and evaluation

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Empirical assessment for planning and organizing the delivery of nursing services within a particular population. Environment and population characteristics are systematically examined from geographical, social, and economic perspectives in order to determine health needs and increase the effectiveness of nursing programs in institutions. Lectures and discussions.

Public Health P6554
Community assessment and analysis in public health

3 hours a week. 3 points.

Prerequisite: the instructor's permission. Designed for clinicians and administrators. Analysis of health problems and solu-

tions as they occur at the community level. Using assessment techniques, environmental and population characteristics are examined from geographical, sociocultural, political, and economic perspectives to income effectiveness of health care delivery. Lecture-seminar format.

Public Health P6560x, or y
Organization theory and health services
2 hours a week. 3 points.

An introduction to an overview of the classical and contemporary concepts of organization and management theory. Theoretical and empirical aspects of organizational design, function, and behavior, as well as the behavior of persons who work in organizations. Develops analytical skills to enable students to apply theoretical concepts to real-life managerial problems.

Public Health P6565z
Health, poverty, and the low income consumer
2 hours a week. 2 points.

An examination of current interrelations between health, individual disease states, and poverty in urban and rural areas in the U.S. Special emphasis on hunger, malnutrition, narcotic addiction, organization of health care, and interrelations of health and legal services in underprivileged communities. Consideration of the politics and epidemiology of international famine. Lectures, seminars, and student reports.

Public Health P8500y or z
Health care delivery systems: safety and efficacy of medical technologies
3 hours a week. 2 points.

Prerequisite: completion of M.P.H. core courses and the instructor's permission. A conceptual framework for medical technology assessment is presented, technologies needing assessment are identified, and types of information needed and mechanisms for testing are reviewed, including health, economic, and social effects. Case studies of safety and efficacy are presented and evaluated, as well as current activities in this field by both the public and private sectors. Shortcomings of the present system, as well as policy alternatives, are reviewed. Several sessions are devoted to the safety and efficacy of prescription and non-prescription drugs in the context of the U.S. and world pharmaceutical scenes; the costs and financing of drug-related services are reviewed in detail. Seminar format.

Public Health P8501y or z
Comparative health systems
3 hours a week. 3 points.

Prerequisite: the instructor's permission. Recommended: completion of public health core courses. Detailed discussion of the health-care systems of countries such as the U.S., Great Britain, Sweden, Russia, China, and Canada. Description of a frame of reference developed by Roemer and containing nine cell types and development of an inventory for each country that permits analysis of any country's health care system, along multiple parameters, and its placement into the typology. Seminar format.

Public Health P8502y or z
Survey research and applications in health services administration
2 hours a week. 3 points.

Prerequisite: *Public Health P6100* and the instructor's permission. Use of survey research methods in health services, including all phases from conceptualization to analysis and implications. Specific projects are discussed and evaluated. Each student writes a research proposal.

Public Health P8504z
Case studies in hospital administration
2 hours a week. 2 points.

Prerequisite: *Public Health P6513* and the instructor's permission. Utilization of empirical case-study techniques to analyze and develop alternative solutions to a variety of hospital operations problems and to develop problem-solving skills.

Public Health P8506y
Colloquium on issues and concepts in international health
2 hours a week. 1 point.

Strongly recommended: completion of core courses. Objective is to enhance awareness of concepts and issues in international health in a public health context of cultural, social, political, and economic differences. Weekly meetings alternate between speakers and panels of students reviewing and discussing the topic presented the previous week.

Public Health P8510y or z
Assessment of health care
2 hours a week. 3 points.

Prerequisite: the instructor's permission and *Public Health P6530* or the equivalent. Detailed techniques of health care assessment, applicable in ambulatory, inpa-

tient, dental, medical, nursing, and other settings, with emphasis on how to choose, adapt, and implement methodologies for specific situations. Lecture/discussions. Major team project required.

Public Health P8515y

Operations research methods in health
2 hours a week. 3 points.

Prerequisite: *Public Health P6103, P6530* and the instructor's permission. Quantitative methods in management science and operations research, with emphasis on their use in health planning and administration. Models covered are queueing, linear programming forecasting, decision trees, and simulation, applied to appointment systems, manpower scheduling, facility size, demand rates, and reimbursement. Techniques are described with advantages, limitations, and applicable problems. Problem sets, examinations, and several computer assignments in data management and decision making.

Public Health P8517z

Complex health care organization and its management

3 hours a week. 3 points.

Prerequisite: *Public Health P6513*, core courses, and the instructor's permission. Coordination, at a more advanced level, of the learned concepts of the complex health care delivery organizations and their management. Regulation, multiinstitutional arrangements, administrative ethics, control, corporate organization, materials management, marketing, reimbursement, contract management, unions, legal issues, planning.

Public Health P8518y

Organization and management of health insurance in the United States

3 hours a week. 3 points.

Prerequisite: the instructor's permission. Strongly recommended: completion of public health core courses. Focus is on similarities and differences between voluntary health insurance (Blue Cross/Blue Shield, HMOs, commercial, including major medical insurance) and publicly sponsored health insurance (Medicare, Medicaid, other public programs), and their interrelationship. Terminology, concepts and issues are stressed, including issues of benefit structures, regulation, fiscal intermediary services, and methods of payment to institutions, physicians, and other providers. Objective is to provide an in-

depth view of the history, organization, and management of health insurance in the United States through presentations, readings, and discussions, in the context of the political reality of the U.S., its present market-oriented philosophy and practice and the associated dilemmas. Seminar format.

Public Health P8519x, y, or z

Master's essay in health administration

Hours to be arranged. 0 to 3 points.

Students obtain experience in preparing concise, well-documented, written presentations on a topic of significance or interest in the field of health administration.

Public Health P8521y

Nursing and the health care scene

2 hours a week. 2 or 3 points.

Prerequisite: the instructor's permission. Trends and issues in professional nursing and major legislative, political, and social trends affecting health care and nursing. Lectures and discussions.

Public Health P8522x or y

Colloquium in nursing administration

2 hours a week. 1 point.

Prerequisite: the instructor's permission. This is a required course for students enrolled in the Nurse Administrator Program. Focus on current issues in the field of nursing administration through a series of presentations by nurse administrators working in the field including graduates of the Nurse Administrator Program. In addition, this course incorporates the currently existing residency/practicum seminar series in which second-year students, engaged in the practicum, present administrative cases studies for discussion and analysis. The colloquium provides a forum for inquiry and debate centering on contemporary dilemmas facing the nursing administration community and for the development of strategies to address these dilemmas. The course meets weekly using a seminar format.

Public Health P8523z

Ambulatory care management

2 hours a week. 2 or 3 points.

Prerequisite: *Public Health P6520* and the instructor's permission. Provides some of the initial skills for managing an ambulatory care practice. Seminar discussions of problems in planning, organization, design, and evaluation of services.

Public Health P8527y
Contemporary dilemmas in health planning, I and II

2 hours a week. 1 point.

Course material derived from current health services. Primary emphasis on New York City.

Public Health P8531y or z
Seminar in health policy and analysis

2 hours a week. 3 points.

Prerequisite: *Public Health P6503*. Develops skills in the analysis of public policy toward health care, through readings and seminar discussion, critiquing examples from the literature, and through independent research. A major paper, presented to the class, is required. Topics include nursing home regulations, hospital cost control, Medicaid reform, regionalization, and other topics determined by the class.

Public Health P8533y or z
Health care financial management

2½ hours a week. 3 points.

Prerequisite: the instructor's permission and an accounting course. Focus on the issues and complexities of financial management in contemporary health care settings. Topics include essentials of cost accounting; objectives and merits of budgeting; fundamentals of working capital; management; reimbursement mechanisms and third-party payer systems; financing strategies and alternatives; and debt markets. An examination of trends in organization design, diversification, and the financial management implications for institutions.

Public Health P8534y
Information management

2½ hours a week. 3 points.

Prerequisite: the instructor's permission. Focus is on the health organization. Analysis of the nature and the uses of information in these settings. Objectives are to develop skills: (1) to define the type of information needed and (2) to provide the control of information necessary for effective management. Automated systems and the range of the application are reviewed.

Public Health P8547y
Legal aspects of nursing

2 hours a week. 2 points.

Prerequisite: the instructor's permission. Focus is on the major aspects of health care law that affect nursing practice, i.e., licensure, scope of practice, malpractice, and the rights of patients and nurses. Cur-

rent trends in legislation and court decisions are discussed. Practical applications are made, and the changing role and responsibilities of the nurse are emphasized.

Public Health P8548y
Rate-setting and reimbursement methods

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Topics include cost finding, cost behavior and pricing, cost functions, cost allocation (review), units of service, revenue maximization, gaming the reimbursement system, varieties of rate-setting and reimbursement methods, and impacts of different reimbursement strategies on revenue.

Public Health P8560y or z
Collective bargaining in health institutions

3 hours a week. 3 points.

Prerequisite: the instructor's permission. The process of collective bargaining, its characteristics and place in our society, and the dynamics of labor relations and the environment in which the legal structure operates; the evolution and current problems of collective bargaining, the reason for these trends and their consequences on the overall function of labor relations.

Public Health P8580
Ambulatory care information systems

3 hours a week. 3 points.

Prerequisite: *Public Health P8534*, and the instructor's permission. An introduction to the effective and efficient use of information systems in the health care sector. Systems analysis theories, concepts, and techniques pertinent to the health care administrator, will be presented. Essential elements of design, development and implementation of hospital information systems, as well as their potential problems, will also be discussed. Although the material is technical in nature, the objective is *not* to train systems technicians but rather to instill the skills necessary to improve the health administrator's ability to manage the planning and/or administration of an effective health information and decision support system. Instruction will consist of lectures, class discussions, and case analysis. This eclectic approach will be supplemented with outside readings and information hardware and software experiences using various systems.

Public Health P6590, P8590, P9590
Tutorials in health administration

Hours to be arranged. 1 to 6 points.

Prerequisite: the instructor's permission. Tailored to the particular interests and needs of individual students. They may take many forms—literature reviews, research projects, field trips, other special studies, or learning experiences. The objective is to enrich the student's program.

Public Health P8592x, y, or z

Tutorial in health planning projects

Hours to be arranged. 2 to 6 points.

Prerequisite: the instructor's permission. Under supervision students carry out actual nonsimulated projects in the New York City Health Systems Agency. Literature review and readings as relevant.

Public Health P8595z

Methods of health planning

2½ hours a week. 3 points.

Prerequisite: *Public Health P6540*. Applied practice in the formal process of health planning. Topics are determined by recent legislation and by perceived institutional requirements.

Public Health P9500y

Doctoral research seminar

2 hours a week. 3 points.

Regular opportunity to present and critically discuss past, present, and proposed dissertation research relating to the generic interests of the division (policy, planning, administration, evaluation). Presentations, from ideas to concepts to designs to collection and analysis of data, implications of findings and critical analysis of all phases of the study.

Public Health P9502x

Doctoral reading seminar

2 hours a week. 3 points.

This seminar is prerequisite to *Public Health P9500*. Both *Public Health P9502* (autumn) and *P9500* (spring) are required of first-year doctoral students. Readings in health administration research are selected by the faculty at large and coordinated by one or two faculty members in order to expose the students to a broad range of subjects. Students are expected to discuss and critically analyze theory and method in health administration with guidance from relevant faculty members. Intended to serve as arena for discussion and inquiry regarding both current and historical is-

sues in health administration policy and research.

Public Health P9550y

Alternative delivery systems

2 hours a week. 3 points.

Examines the development and effectiveness of nontraditional organizations for delivering health services. Starting with the factors that have led to the growth of these new systems, the course considers investor-owned hospital chains, health maintenance organizations, preferred provider organizations, surgicenters, and other ambulatory care operations, and for-profit businesses run by voluntary hospitals. The implications of alternative delivery systems to the health of the population, equity in access to care, and total expenditures are discussed.

Public Health P9594x

Tutorial: advanced research techniques in health administration

3 hours a week. 3 points.

Prerequisite: *Public Health P9502* and the instructor's permission. Presentations of advanced research techniques in health administration. Students work in groups or individually on the planning and design of a research study, and on the execution of every step except actual data collection. Each group or person prepares a report on the objectives, detailed plans, and significance of the research.

POPULATION AND FAMILY HEALTH

Public Health P6601x

Maternal and child health/family planning: issues in perspective

3 hours a week. 3 points.

Introductory review of international and domestic population and related family health issues from the perspectives of history, economics, health, cross-cultural factors, behavior, law, policy, and the delivery of services. Student project required.

Nutrition M8220x

Food and nutrition: a public health perspective

3 hours a week. 3 points.

Provides an introduction to the problem of food and nutritional diseases in domestic and international settings from a public health perspective and the relationships between the determinants and the

programs designed to solve these problems. Paper and final examination.

Public Health P8602y
Methods of demographic analysis
3 hours a week. 2 points.

An advanced review of demographic concepts and techniques; use of census and registration data, procedures of mortality and fertility analysis, population projections, stable populations, and the inference of demographic measures from inadequate data.

Public Health P8605z
Public health aspects of reproductive health care
6 hours a week. 3 points.

Presents a broad overview of concepts and issues in the field of reproductive health care, including pregnancy, childbirth, infant care, family planning, abortion, and sterilization. Past and current developments in maternal and child health programs and family planning services will be tracked, with a description on the organization of agencies, policies, laws, and funding at the federal, state, and local levels. Technical information will be presented regarding human reproduction, fetal growth, and development and contraception. Attention will be given to the many complex ethical issues rising from new technologies (e.g., fetal monitoring), changing social conditions (e.g., adolescent pregnancy), and conflicting definitions of morality (e.g., in vitro fertilization).

Public Health P8612y
Population law and policy
3 hours a week. 3 points.

Salient legal issues relating to population, both international and domestic. Topics include abortion, compulsory sterilization, access to contraception, services to teenagers, incentives and disincentives, use of paramedical personnel, national population laws, and family planning as a human right. Seminars, using a modified version of the law school case approach and, in some cases, lectures.

Public Health P8614y
Maternal-child and family planning program development, administration, and evaluation
3 hours a week. 3 points.

Maternal-child health and family planning program history and policy formation,

and the development of planning, administrative, and evaluation systems in the U.S. and abroad. Practice in the use of specific techniques for target setting; determining need; caseload forecasting; management information and service statistics systems; manpower planning; training, supervision; measuring program achievements and impact; budgeting and accounting; and estimating cost/effectiveness.

Public Health P8615z
Adolescence and fertility
Hours to be arranged. 3 points.

Shows why adolescent fertility is of concern. Prevalence of adolescent sexuality and contraceptive use; pregnancy, abortion. The service needs of adolescent parents, policy issues, effectiveness of family planning programs serving teenagers; future research needs, international issues. Term paper required.

Public Health P8617x
Research design, interpretation, and analysis
3 hours a week. 3 points.

Research problem selection, hypotheses, experiments, case studies, surveys, and data collection strategies. The logic of data reduction and analysis, and issues and techniques of measurement.

Public Health P8622z
Community nutrition programs
3½ hours a week. 2 points.

Seminar on community nutrition problems and programs that attempt to ameliorate them, including an analysis of nutrition surveys and other factors affecting food selection in various segments of a community. Programs discussed include those sponsored by both federal and private agencies. Students learn what community nutrition problems prevail, their determinants, and how program design impacts on ameliorating such problems. Required readings. Student evaluation based on attendance, class participation, and a final exam. A brief written evaluation of a nutrition program is required.

Public Health P8623y
Practical skills in social science research
2 hours a week. 2 points.

Prerequisite: *Public Health P8617* or the equivalent. Practical, hands-on experience in social science research. Students design a simple research study, write a question-

naire, conduct interviews, code, clean, and analyze data. A summary of research results is required.

Public Health P8625z

Public health interventions in early childhood: a developmental approach

6 hours a week. 3 points.

Exploration of concepts, issues, and status of research related to preventive and therapeutic intervention programs for infants and young children. Focus on normal development, methods of screening and assessment, analysis of risk factors, rationale for interventions, and critical evaluation of program effects. Seminar format with class discussion and invited speakers. Student project required.

Public Health P8627x

Childhood injury control

2 hours a week. 2 points.

Injuries are the leading cause of death and disability in children and youth in the United States today. Provides an introduction to the extent and nature of the injury problem, to basic injury research methods, and to the fundamental principles of injury control. The distribution, causes, and prevention of motor vehicle, home and recreational injuries will be examined. Final examination.

Public Health P8628y

Child health: problems and solutions

3 hours a week. 3 points.

Provides an overview of child health issues in the United States. Included are discussions of trends in child health, populations at risk, demographic and social influences affecting child health, and a critical look at health services for children. Child health issues will be presented from the perspective of age and developmental level. In addition, addresses selected child health topics, chosen for their public health significance. Paper and examination.

Public Health P8630z

Clinical issues in maternal-child and family health in the U.S.

3 hours a week. 3 points.

Provides students with an appreciation of the many health related factors that influence maternal and child health (MCH) in the United States. The students will become aware of the clinical concerns that characterize MCH, and how these can be best approached from the management as-

pects, as well as from the preventive and promotive facets. The importance of cultural and environmental influences on MCH will be presented for the student to be in position to understand that none of the clinical conditions exist in isolation. Final project.

Public Health P8637z

Qualitative research—understanding client needs and program outcomes

3½ hours a week. 2 points.

Provides an introduction to qualitative research methods and stresses their application to maternal/child health and family planning program design and evaluation. Includes lectures, training exercises, and group discussion. Each student will be responsible for designing a small, focused field research project utilizing qualitative methods which will be implemented during the course and reported on during the final session. Readings will be provided for each session.

Public Health P8640y

Program evaluation in health and population

3½ hours a week. 2 points.

Evaluation methods for family planning and other human service programs. Prior knowledge of statistics is not necessary. Focus on empowering program managers to design their own evaluations as well as manage the evaluation activity of funders or outside researchers. Lectures and class discussion with each student developing an evaluation proposal. Evaluation of students based on written assignments, class discussion, and the proposal.

Public Health P8643y

Maternal and child health in international primary health care

2 hours a week. 2 points.

Covers the maternal and child (MCH) elements in primary health care in the Third World. The priority health problems of mothers and children are identified, primary health care interventions capable of dealing with these problems are reviewed, the methods of overcoming the obstacles to providing the services are discussed. The objective is to provide an understanding of the importance of MCH in primary health care and of the ways of meeting MCH needs in the Third World. Classes include slide or film presentations by the instructors, short student presentations,

and group discussions, with the student's performance evaluated on the basis of class participation and one term paper.

Public Health P8645x

Fundamentals of the policy-making process

3 hours a week. 3 points.

Explores and examines the underlying bases, the fundamental underpinnings, the values, beliefs, concepts, and elements, explicit and implicit, which give form and shape to a nation's programs, policies, and practices in the field of maternal and child health. Students will gain skill, knowledge and expertise in identifying the elemental ingredients in the decision-making process and in using this to effectively intervene as policymakers. Lectures, case studies, selected reprinted articles, readings, and classroom analysis of cases, give experience as well as knowledge in the field. Requirements: group case study paper and final examination.

Public Health P8650y

Nutrition in pregnancy and early lactation

3 hours a week. 3 points.

Social and biological conditions necessary for normal pregnancy and fetal growth; nutrient requirements of the mother and fetus and how they are determined; effects of over and under nutrition on mother and fetus; epidemiologic factors associated with low birth weight; programs and counseling procedures for improving pregnancy outcome; early lactation. Through lectures, slides and readings, students will gain detailed knowledge of pregnancy nutrition and methods for improving it, as well as learning about gaps in this knowledge which currently limit the effectiveness of programs to promote maternal-infant health. Students will be evaluated based on their participation in class discussions and a midterm and final examination.

Public Health P8660y

Marketing in maternal and child health and family planning

3½ hours a week. 3 points.

Aims to familiarize the student with marketing, advertising, publicity, and public relations techniques as they are utilized in the health care field. Topics include internal communications in the organization,

lobbying techniques, funding sources, consumer issues, and use of the media, with lectures by the instructor and guest speakers, drawing on case studies. Evaluation is based on class participation and student projects.

Public Health P6690, P8690, P9690x, y, or z

Tutorials in population and maternal and child health, nutrition, and international health

Hours to be arranged on an individual basis. 1 to 6 points.

Tailored to the particular interests and needs of individual students, these tutorials may take many forms—seminar, literature reviews, research projects, field trips, and other special studies or learning experiences—drawing upon the expertise of faculty members in these areas.

SOCIOMEDICAL SCIENCES

Public Health P6700x and y

Introduction to sociomedical sciences

2 hours a week. 3 points.

This course, or an alternate selected from the list approved by the S.M.S. division, satisfies the sociomedical core requirement for the M.P.H. degree. A critical review of research illustrating the application of social science concepts and methods to health and health care. Issues include the effect of social and psychological factors (such as cultural and ethnic influences, social networks, social class, personality, and stress) on health and health behavior.

Public Health P6704x

Introduction to medical sociology

2 hours a week. 3 points.

Required of sociomedical sciences students; open to others with the instructor's permission. Introduction to selected issues in medical sociology, the application of sociological concepts and methods to the study of health and health care. Topics include social factors in conceptions of health and illness; social factors in relation to health, health-related behavior, and the use of health care services; and social factors in the organization of health care. Research paper is required.

Public Health P6721x or y
Sexuality, health issues, and public policy

2 hours a week. 3 points.

Prerequisite: the instructor's permission. The field of public health is frequently called on to address health and policy issues which bear, directly or indirectly, on sexuality and sexual behavior as in the case, for example, of birth control and sexually transmitted disease, most recently, AIDS. Developing a public health discourse about such issues has not been simple, because the growth of public health as a field in the past hundred years paralleled major changes in the organization of sexuality, family, and gender in the U.S. and Europe. Analyzes historical and contemporary examples of health issues with sexual dimensions in order to identify the significant elements in the formulation of health policy in this arena. Particular attention is given to the complex interplay between empirical data and scientific knowledge, professional and governmental definitions of health problems, and the larger cultural frameworks used to understand sexuality. Students will be given quizzes and a term paper to complete.

Public Health P6726y
Social aspects of physical disability and rehabilitation

2 hours a week. 3 points.

Social aspects of physical disability, approached at three levels; (a) individuals with disabling conditions; (b) occupations and organizations involved in rehabilitation; and (c) social movements and social policy related to the physically handicapped. Emphasis is on the latter two. Seminars, with two or three invited speakers. A paper based on a research project (developed in consultation with the instructor); reports to the class on work-in-progress at midterm.

Public Health P6727x
Preventive health behavior

2 hours a week. 3 points.

Concepts, issues, status of research in health maintenance, and disease prevention. Role of behavioral, socioeconomic, psychological, and structural factors. Effects of life-styles—smoking, drinking, diet and weight control, exercise, stress; and preventive health practices—oral health practices, use of seat belts, blood pressure control. Evaluation of research in these areas. Student reports and a paper.

Public Health P6728y
Social policy and prevention

2 hours a week. 3 points.

Coordinated with P6727 and P6729. Intended to acquaint students with the scientific, social, economic, historical, and political influences that have shaped the development of current social policy in prevention. Special emphasis will be placed on analyzing the demonstrated and potential uses and misuses of educational, behavioral, and organizational intervention strategies as instruments of national policy in health promotion and disease prevention. Topics include a review of the historical development, goals, objectives, strategies and progress of the national program in health promotion and disease prevention; the science base underlying prevention efforts; the social and political context for prevention; review of selected case studies illustrating the application of policy and concepts in prevention to risk reduction in various community settings; and ethical issues and moral problems of social justice, protection of privacy, and social control in prevention policy. These topics will be examined through a combination of lectures, seminar discussions with student presentations, and guest speakers. A paper presenting an analysis of a significant issue in prevention policy is required.

Public Health P6729y
Preventive medicine and public health

2 hours a week. 3 points.

An overview of current research in preventive medicine, with emphasis on implications for public health policy and health care delivery. Topics include primary and secondary prevention of cardiovascular disease and cancer, as well as less traditional concerns of preventive medicine, such as accidents, violence, and drug abuse. Future trends in prevention and sociomedical implications will be considered. Lectures, invited speakers, discussion. Assigned readings, written assignments, and term paper.

Public Health P6750x
Introduction to medical anthropology

2 hours a week. 3 points.

Required of sociomedical sciences students; open to others with the instructor's permission. Overview of medical anthropology, the examination of health, disease, and medicine in the context of human cul-

ture. Emphasis on cross-cultural data and comparative method. Topics include ecological influence on health and disease; adaptation; subsistence and social structure, medical systems and theories; curing, patients, and healers; diagnosis and divination; cognition; acculturation and social change. Lecture format with critical discussion encouraged. Examination.

Public Health P6767y

Introduction to health psychology

2 hours a week. 3 points.

Required of sociomedical sciences students; open to others with the instructor's permission. The first part of this survey course will involve lectures and structured discussions on the theoretical and empirical links between behavioral, social, and personality factors and personal health status. We will critically examine research focused on health-relevant areas such as personal predispositions, life-style characteristics, and treatment compliance. The second part will focus on the relationships between individual psychological factors and specific disorders such as cancer, heart disease, gastrointestinal disorders, and mental illness. Students will be evaluated on the basis of a 20-minute presentation and a 10–20 page paper.

Public Health P6792y

Tutorial: adolescent health and health behavior

Hours to be arranged. 2 points.

Prerequisite: the instructor's permission. Review of research on indicators of adolescent health and on adolescents; use of medical services. Students are oriented to interrelationships of various health-related behaviors (diet, smoking and substance use, sexual/reproductive) and their psychosocial determinants in relation to adolescent life stage developmental needs. Attention given to socioeconomic, ethnic, and cohort variations. Research paper required.

Public Health P8705y

Seminar in evaluation of health programs

2 hours a week. 3 points.

Prerequisite: *Public Health P6104* or the equivalent, and the instructor's permission. Review of the basic principles and methods of evaluation in public health. Critical analysis of existing evaluation

studies. Development of special projects in the evaluation of public health programs.

Public Health P8711z

Women and health

3 hours a week. 3 points.

Overview of the influence of gender on women's experience of health and illness. Focus on the U.S., with consideration of cross-cultural data. Topics include conceptual and methodological issues; risk and incidence; self perception; illness behavior; health seeking and the use of health services; the socialization and organization of health care workers; the response of health institutions. Emphasis on viewing women's health experience within the surrounding social, economic, political, and symbolic context. Lecture format with critical discussion. Student presentations and short papers required.

Public Health P8717x or y

Psychosocial stress and illness

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Theory and research on relations between life events, personality, social situations, and onset and remission or exacerbation of various chronic disorders.

Public Health P8718x or y

AIDS: social science and public health perspectives

Hours to be arranged. 3 points.

Prerequisite: the instructor's permission. A critical examination of social, psychological, political, and economic factors bearing on AIDS and their implications for public health. Specific topics addressed are: a comparison of societal responses to AIDS and earlier epidemics; beliefs, attitudes, and behavioral changes among gay men, IV drug abusers, and others with AIDS; the organization and financing of health care for person with AIDS; the effects on health care workers of caring for PWA's (persons with AIDS); an assessment of social, cultural, and psychological barriers impinging on public health interventions to contain the spread of AIDS; ethical and international issues. AIDS and other disease conditions are compared and similarities and differences emphasized. A midterm exam and a take-home or term paper are required.

Public Health P8719x, y or z
Master's essay in sociomedical sciences
Hours to be arranged. 3 points.

Required for M.P.H. students in the sociomedical sciences program. The essay should involve research based either on data collected by the student or on secondary analysis of available data. It may develop from a term paper for a course, from a research project, or may be a separate project. The form and content of the essay are not rigidly specified, as long as the subject matter is appropriate and the quality is high. The essay is reviewed by two faculty members, one of whom must be from the Division.

Public Health P8720x or y
The health professions
2 hours a week. 3 points.

A comparative sociological approach to the study of the professions. The social origins, ideologies, and socialization of health professionals; the division of labor; the response of professionals and professional associations to changes in the organization of health care; relations between the professions and society, with particular emphasis on the political role of the health professions in promoting and resisting change. Student reports and a paper.

Public Health P8724y
Drug abuse and society: epidemiological and psychosocial aspects
2 hours a week. 3 points.

Seminar in drug abuse as a health and social problem. Historical and cross-cultural perspectives; the concept of addiction; patterns and trends in drug use and abuse—the epidemiology of tobacco, alcohol, heroin, marijuana, and psychotropic drugs; the antecedents and consequences of drug use and abuse—psychosocial perspectives; drug abuse and crime; the social costs of drug abuse; the evaluation of treatment and prevention strategies. Term paper.

Public Health P8726y
Tutorial: advanced issues in AIDS research

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Current issues and problems in AIDS (Acquired Immune Deficiency Syndrome) research will be examined from the perspectives of both the social sciences and the biological sciences. Students will be expected to critically examine and discuss research journal articles in their particular

field of study. More than 1 credit may be earned by also satisfactorily completing a written project (for example, a research paper or grant proposal) on AIDS by the end of the term.

Public Health P8727x, y and z
Tutorial: meta-analysis

Hours to be arranged. 2 points.

Introduces students to statistical techniques for synthesizing the findings from different experimental studies. Course work will include reading and weekly discussions of a textbook on meta-analysis of particular interest. Students will work on a small project applying meta-analysis to synthesize experimental literature on a subject of the student's choice. Enrollment is limited. Permission of instructor required.

Public Health P8729x
Organizational and community linkages

2 hours a week. 3 points.

Develops the optimal principles by which organizations and communities link to each other. As such it will examine some of the key issues by which (a) good health practices are communicated to the public (e.g., mass media, indigenous workers, voluntary associations, etc.), and (b) health services can be optimally delivered to various health communities (e.g., ethnic, minority, middle-class, etc.). One part of the analysis will look at principles of administrative structure (e.g., hospitals, nursing homes, HMOs) and see how they affect the nature of linkages. Another part of the analysis will be the conceptualization of the various barriers to effective health communication between organizations and communities. For example, what type of linkage is optimal for dealing with clients who either lack knowledge about illness, have negative attitudes toward doctors, or do not have financial resources to obtain good medical care. Organizational material will draw on health data but include other areas as well to show the generality of the linkage principles. Midterm and final examinations.

Public Health P8730x
Social and cultural analyses of the health care organization

2 hours a week. 3 points.

U.S. health care organizations have been examined through social and cultural analysis to explain the disparity among an or-

ganization's charter, its possibilities for delivering care, and the way it behaves. Methods and theories and substantive studies have proliferated in the last two decades and have been grouped in different approaches; social construction of reality, labeling theory, social network analysis of support, referral and community intervention, conventional and radical organizational analyses of medical institutions, and the socialization of professionals and patients. The primary objective is to appraise these approaches critically, and to investigate the reliability of their information about health care organizations, with the secondary objective of increasing understanding of U.S. health care. Students are responsible for preparing three very brief case studies that will apply some of the approaches. A take-home final examination.

Public Health P8731y
Informal social networks

2 hours a week. 3 points.

Indicates the unique role that informal networks play in a modern industrial society as contrasted to formal organizations. Outlines the specific roles played by spouses, kin, friends, neighbors, volunteers, and various other "weak tie" groups. Ideal states of each of these groups will be explored along with major variations and their impact on social functioning and health. Midterm and final examinations.

Public Health P8732y
Application of linear models of socio-medical sciences

2½ hours a week. 3 points.

Prerequisite: the instructor's permission. The mathematical foundations of correlation, regression, factor analysis, and cluster analysis are presented with emphasis on geometric and graphical representations. The similarities and differences between correlation, regression, analysis of variance and covariance, factor analysis, and cluster analysis are presented, with specific attention to how they relate to research hypotheses in sociomedical sciences. Focus is on how to decide which of these methods best answers specific research hypotheses. Examples using real research questions are used. Evaluation is on the basis of homework essays and a final examination.

Public Health P8740x or y
Social and economic factors in clinical decision-making

2 hours a week. 3 points.

A review of different models of clinical decision-making; economic, sociological, and psychological. These models are systematically compared with each other and with the medical model in terms of the factors presumed to influence both the amount and content of diagnostic and treatment services (e.g., tests, medical vs. surgical treatment, referrals, revisits) and, more generally, clinical practice styles. Special topics: the influence of different methods of physician reimbursement, explicit standards (e.g., Diagnostic Related Groups), legal and ethical issues, organizational settings, professional norms, peer and patient pressures, and the diffusion and impact of new medical technology. Paper required.

Public Health P8745y
Social and economic determinants of health

2 hours a week. 3 points.

Prerequisite: *Public Health P6700 or P6704*. Examination of research on disparities in health and illness related to social and economic inequality in the United States. Lectures and readings review theoretical and empirical research on factors linked to class, income, and ethnic differences that have been hypothesized to explain the generally poorer health and higher rates of mortality among members of lower socioeconomic groups. Topics covered include concepts and measurement of health and social stratification, assessment of evidence for proposed links between socioeconomic position and health through group differences in health beliefs, health behaviors, exposure to social stress, occupational hazards and employment instability, and access and utilization of medical care services. Also reviewed are policy initiatives aimed at narrowing health disparities between different socioeconomic groups. Homework assignments and a take-home final examination are required.

Public Health P8760y
Medical anthropology: advanced seminar

2 hours a week. 3 points.

Prerequisite: *Public Health P6750* and the instructor's permission. Selected reading and analysis of recent work in medical an-

thropology, with emphasis on complex society, the relationship between health and illness and the larger cultural context, and the use of qualitative and quantitative methods. Seminar format with discussion and student reports. Term paper developed through student-instructor consultation.

Public Health P8763y

Categorical data analysis in survey research

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Introduction of various methods used in the analysis of categorical data (e.g., measures of association, general log-linear analysis, logit models log-linear time-trend models, log-linear stage models, association models) with an emphasis on the practical knowledge necessary for application to survey research data and for understanding the results. Provides opportunity for familiarity with a new computer program for log-linear analysis: the program LOGLINEAR and the SPSSX package. Grading is based on a midterm examination and a short term paper.

Public Health P8783z

Tutorial: sociomedical aspects of alcohol use

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Objectives are to give students awareness and knowledge of aspects of alcohol use and abuse, including cross-cultural patterns of drinking and problem drinking; definitions of alcoholism; measurement and extent of alcohol-related problems; physiological and psychological effects; medical complications; public and professional attitudes; models of social control, prevention, and treatment of alcoholism, including comparisons to other drugs. Assignments will be adapted to student's research and/or work interests.

Public Health P8785x or y

Tutorial: mental health among minority groups

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Readings and discussion of the epidemiology of mental health among minority groups in the U.S. Review of the literature bearing on the mental health needs of minority groups. Special emphasis will be given to Hispanics. The tutorial can also include discussions on the various factors

and/or sources of stress that have been posited to explain the distribution of psychopathology among different ethnic groups.

Public Health P8791y

Tutorial: self-help alternatives to biomedical therapies

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Hypnosis, relaxation, biofeedback, meditation, and other nonintrusive, behavioral therapies have been used to control and/or terminate stress-based illness and self-destructive behaviors, i.e., hypertension and cardiovascular disease, surgical pain, headaches, smoking, and over-eating. A one- or two-term tutorial with goals of: (1) reviewing the psychological, sociological, and anthropological aspects of these alternative therapies; (2) identifying commonalities and differences; (3) developing research strategies for exploring the clinical and preventive use of these therapeutic modalities.

Public Health P8795y

Social and psychological consequences of institutional and community care

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Third-party payers and insurance carriers have forced shorter length of hospital stay for most illnesses, requiring that the rehabilitative phase be managed in the community setting. Exploration of the effects of this change on illness course and outcome (recovery/rehabilitation) and on the family and the community at large. In the health professions, the changing locus of health care delivery has implications for role definitions as well as staffing and organization of services and support programs. Seminar format. Term paper required.

Public Health P8796y

Tutorial: review of issues and research in the sociodental field

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Review of content areas in research and with critical issues selected broadly from the sociodental field; evaluation of existing knowledge. Topic areas include sociodental epidemiology; indicators of psychosocial impact of dental conditions; oral health behavior including utilization and preventive dental behavior; patient attitudes and compliance; dental health edu-

cation; dental manpower; dental care delivery systems. Guided readings and discussions or development of research project. In selecting readings, emphasis is on works involving empirical data, social psychological factors, or using sociomedical research approach.

Public Health P8797y

Tutorial: review of issues and research on compliance with therapeutic and preventive regimens

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Readings and discussion of development of research project. Topics include concepts and methods in defining and measuring compliance; determinants of compliance; strategies for improving compliance. Regimens refer to taking of medications, keeping appointments, carrying out preventive oral home care practices, dietary and other life-style changes—smoking, drinking, exercise—recommended for disease prevention and health promotion.

Public Health P9704x

Tutorial: interdisciplinary work; problems and prospects

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Readings and discussion of various types of interdisciplinary work (collaboration between practicing professions, between practicing professions and academic disciplines, and between academic disciplines) and the conceptual, organizational, historical, and other social factors that facilitate and inhibit interdisciplinary work. Focus on social science research and teaching, with special emphasis on their application to health and health care. Students are expected to: (1) develop an understanding of the nature of interdisciplinary work and the factors that promote and inhibit it; and (2) formulate questions and design empirical research studies investigating these issues. Case studies of interdisciplinary projects, intensive reading, student reports, and research papers.

Public Health P9705y

Sociomedical health indicators

2 hours a week. 3 points.

Prerequisite: the instructor's permission. Critical examination of sociomedical aspects of current and proposed community population health indicators as part of the

general movement toward social indicators. Student reports and a paper.

Public Health P9710y

Exploratory and confirmatory factor analysis (LISREL)

2½ hours a week. 3 points.

Prerequisite: a course in linear regression and the instructor's permission. An introduction to the mathematics and interpretation of principle components, principle axis factor analysis, orthogonal and oblique rotations, and maximum likelihood factors analysis. The matrix algebra necessary for LISREL and the algebra of expectation are given. Examination of the potential for and limitations on the testing of causal models for social science data, through reading, lectures, and homework, including computer data analysis.

Public Health P9715x

Tutorial: social stress and mental health

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Primarily for students interested in acquiring research skills pertaining to the stress and coping paradigm. Readings and discussion of conceptualization and measurement of psychosocial stressors, mental health outcomes, and internal and external mediating factors. Individual or small group reading tutorials or guided independent research.

Public Health P9780y

Sociomedical sciences doctoral research seminar

2 hours a week. 2 points.

Required for all sociomedical students. Seminar providing a regular opportunity for critical discussion of doctoral dissertation research, from conceptualization through design, data collection, data analysis, and implications.

Public Health P6790, P8790, P9790x, y, and z

Tutorials in sociomedical sciences

Hours to be arranged. 1 to 3 points.

Prerequisite: the instructor's permission. Primarily for students who wish to acquire further knowledge and research skills in areas of special interest. Individual or small group reading tutorials or guided independent research.

TROPICAL MEDICINE

Public Health P6815x

Parasitic diseases and international health

2 hours a week. 2 points.

Prerequisite: the instructor's permission.

Parasitic diseases caused by protozoa and helminths and of arthropod vectors of human diseases, especially those in tropical and subtropical areas of the world. Emphasis placed on their epidemiology, the various social, economic, and political factors that affect their control and spread, and their importance to international health. Lectures and class discussions. Final examination and term paper.

Public Health P6890, P8890, P9890x, y, and z

Tutorials in tropical medicine

Hours to be arranged. 1 to 6 points.

Prerequisite: the instructor's permission.

Independent research under supervision.

Registration, Expenses, and Other Information

REGISTRATION

Students are required to report in person at the administrative office of the School at the beginning of each term. Registration dates are given in the Academic Calendar at the end of this bulletin.

All students are asked to give Social Security numbers when registering in the University. However, Social Security numbers are required of foreign students *only* when those students will be receiving payment from the University. Foreign students should consult the Office of Foreign Student Services, 208 Lewisohn Hall, for further information. Other students who do not have Social Security numbers should obtain them from their local Social Security offices *well in advance of registration*.

Students who are not citizens of the United States and who need authorization for special billing of tuition and/or fees to foreign institutions, agencies, or sponsors should go to the Foreign Student Adviser with two copies of the sponsorship letter. Special billing authorization is required of students whose bills are to be sent to a third party for payment.

Changes in Programs of Study

Once registered, a student may add or drop courses by filing a formal change-of-program application approved first by the administration of the school and then filed with the Office of Student Information Services during the change of program period (See Academic Calendar).

Students may drop courses after the change of program period by following the same procedure. However, for individual courses dropped after the last day of the change of pro-

gram period, no adjustment of tuition will be made. (See Academic Calendar.)

Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and will result in a grade of F (unofficial withdrawal).*

All changes must be approved by the student's adviser and the Dean's office.

AUDITING COURSES

Degree candidates who are enrolled for 15 points or more in the current term may audit one or two courses in any division of the University without charge. Application is made at the Office of Student Information Services (O.S.I.S.) during the change-of-program period in each term. Applications require (a) the certification of the O.S.I.S. that the student is eligible to audit and (b) the approval of the dean of the school in which the courses are offered. Elementary language courses, laboratory courses, and seminars will not be open to auditors. Other courses may be closed because of space limitations. It is not possible to turn an audited course into a credit course by paying the fee after the fact. Students may not audit courses previously taken for credit.

FEES

The following fees, prescribed by statute, were in effect for 1987-1988 and are subject to change at the discretion of the Trustees.

University charges such as tuition and fees and residence halls and board plans are subject to a **FINANCE CHARGE** if not paid when due.

Tuition

For all courses, per point \$ 396

With the provision that the
fee for a program of 15
to 19 points, per term is 5,935

For practicum/residency
the fee, per term, is 396

**Health Service and Hospital
Insurance Fees**

For all full-time students (optional
for part-time students):

	<i>Student</i>	<i>Student & Spouse</i>	<i>Student & Family</i>
Blue Cross Hospitalization Per year (September 1-August 31)	\$257	\$ 617	\$ 617
Student Health Service Per Year (September 1-August 31)	<u>375</u>	<u>750</u>	<u>1,000</u>
Total health fees	\$632	\$1,367	\$1,617

The student health service fee contributes to the cost of operating the Student Health Service. The hospital insurance fee pays the annual premium of the Associated Hospital Service of New York. Participation in these programs is compulsory for all full-time students; students who already carry hospital insurance, however, will be charged the health service fee upon presentation of proof of coverage. Part-time students are encouraged to participate in the combined health plan. Upon payment of additional fees, students can acquire hospital insurance coverage for their dependents, and the latter are eligible to receive the benefits of the health service program. Students should consult the Office of Student Health Services, 60 Haven Avenue, for further information on dependent coverage. The Student Health Service, which holds daily office hours, is on the street level of Bard Haven Tower 1 (60 Haven Avenue).

Application Fees and Late Fees

Application for admission	\$35
Late application, or late renewal of application, for a degree	50

Late Registration Fees

During late registration	\$ 50
After late registration	100

Withdrawal and Adjustment of Fees

A student in good academic standing who is not subject to discipline will always be given an honorable discharge if he or she wishes to withdraw from the University. If the student is under twenty-one years of age, the parent or guardian must first give consent in writing to the Dean.

Any adjustment of the tuition that the student has paid is reckoned from the date on which the Registrar receives the student's written notifica-

tion. Application fees, late fees, and special fees are not subject to rebate. Up to and including the second Saturday after the first day of classes, the following amount will always be retained:

Full-time study	\$75
Part-time study	40

An additional percentage of the remaining total tuition charged (as indicated in the schedule below) will be retained for each week, or part of a week, that the student remains registered. The student is considered registered until the date on which written notice of withdrawal is received by the Office of Student Information Services.

ADJUSTMENT SCHEDULE

	<i>Minimum Fees Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Second Saturday after first day of classes	\$40 or \$75	0
Week following second Saturday after first day of classes	\$40 or \$75	10
Second following week	\$40 or \$75	20
Third following week	\$40 or \$75	30
Fourth following week	\$40 or \$75	45
Fifth following week	\$40 or \$75	60
Sixth following week	\$40 or \$75	75
Seventh following week	\$40 or \$75	90
Eighth following week	\$40 or \$75	100 (no adjustment)

APPLICATION OR RENEWAL OF APPLICATION FOR A DEGREE

Degrees are awarded three times a year—in October, January, and May. A candidate for any Columbia degree (except the Ph.D. degree) or for a certificate must file an application with the Office of Student Information Services, 630 West 168th Street. For the last day to file for each degree in 1987–1988, 1988–1989, and 1989–90, see the Academic Calendar. A late fee of \$50 will be charged after these dates and until the expiration of the *late* filing period for each conferral date. Applications received *after* the late filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student must file another application. A \$50 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications (see above).

REQUESTS FOR TRANSCRIPTS

The Family Educational Rights and Privacy Act of 1974 as amended prohibits the release of educational records by institutions without the specific written consent of the student or alumnus. Students or alumni may request copies of their records by writing to the Office of Student Information Services, Room 141, Black Building, 630 West 168th Street, New York, N.Y. 10032. *Official*

copies will be sent directly by the University only to an official address such as another university, a business firm, or government agency. However, students or alumni may request that unofficial copies of their transcripts (stamped "Student Copy") be sent directly to them.

There is a charge of \$5 for the first transcript requested and \$1 for each additional request when submitted together. There is no charge for intrauniversity copies sent between University offices. Transcript requests are processed in the order received and require five to seven working days for processing. Specific deadlines should be mentioned, and checks accompanying requests should be made payable to Columbia University.

EXPENSES

The University advises each student to open an account in one of the local banks as soon as he or she arrives in New York City. Since it often takes as long as three weeks for the first deposit to clear, the student should cover immediate expenses by bringing travelers' checks or a draft drawn on a local bank. Students who expect to receive traineeship or scholarship support from Columbia University should be prepared to wait up to four weeks for the receipt of their initial stipend checks.

Tuition and room rent may, of course, be paid by check, and any excess will be refunded to the student after the check has been cleared.

Estimate of Expenses

The following figures are provided as guidelines to aid the student in planning a nine-month academic year budget for living and educational expenses while attending the School.

	<i>Living with Parents</i>	<i>Living alone</i>	<i>Married</i>
Living expenses (room, board, clothing, laundry, travel, sundries)	\$ 2,400	\$ 8,460	\$12,150
Educational expenses (tuition, fees, books and supplies, field travel)	13,027	13,027	13,027
	<u>\$15,427</u>	<u>\$21,487</u>	<u>\$25,177</u>

NOTE: The married student should add \$140 a month for each additional dependent.

HOUSING

On the University Campus

The University provides limited housing for undergraduate and graduate men and women who are regularly registered either for an approved program of full-time academic work or for work being done on a doctoral dissertation.

AT THE HEALTH SCIENCES CAMPUS

Housing at the Health Sciences campus is coordinated through the Health Sciences campus Central Housing Office, 50 Haven Avenue, New York, N.Y. 10032. Students are urged to inquire about housing as soon as they apply for admission to the School. The Housing Office, in addition to handling applications for the facilities described below, maintains a registry of apartments off campus in the Health Sciences area.

Housing, primarily for married students, is available at Bard Haven, 100 Haven Avenue, New York, N.Y. near the Health Sciences campus.

Furnished studio apartments are available for single students at 154 Haven Avenue, New York, N.Y. Each one-room efficiency unit includes a stove (without oven), refrigerator, and separate bath. A limited number of one-bedroom apartments are available, primarily for married students. Rents for all apartments vary depend-

ing upon whether they are on upper or lower floors and face the street or the river. Heat and hot water are included in the rent; electricity is on individual meters. Air conditioning is available at the renter's expense.

Bard Hall, 50 Haven Avenue, the residence hall for students in the health sciences, is also about three blocks from the School. Information on rates is available in the Bard Hall Housing Office.

AT THE MORNINGSID CAMPUS

Housing at the Morningside campus is available to students in dual degree programs who are enrolled at the Morningside campus. Information on residence halls and unfurnished apartments at the Morningside campus may be obtained through the Residence Halls Assignments Office, 111 Wallach Hall, New York, N.Y. 10027.

Off-Campus Housing

Students who wish to live in rooms or apartments off campus in either the Morningside or health Sciences areas may consult the Registry of Off-Campus Accommodations, 115 Hartley Hall, Columbia University, New York, N.Y. 10027, for information. A letter of admission or student I.D. must be in hand to use this service.

International House, a privately owned student residence near the campus, has accommodations for about five hundred students, both foreign and American. To be eligible for admission a student must be at least twenty-one years old and must be registered for at least 12 points or for a program of full-time research. Inquiries should be addressed to the Admissions Office, International House, 500 Riverside Drive, New York, N.Y. 10027.

CAREER DEVELOPMENT

The Career Development Office offers career guidance to individual students and maintains information on students, alumni, and current job offerings in public health. The office receives numerous requests for job applicants, interns, and residents from local, national, and international agencies.

The *Job Bulletin*, which lists current opportunities in health administration, health planning, research, family health and planning, epidemiology, biostatistics, international health, geriatrics and gerontology, and related fields, is currently published monthly. The bulletin is available to students and alumni. Career Development Workshops and Seminars are offered during the year, sponsored jointly by the Alumni Association, the Student Council, and the School.

ALUMNI AFFAIRS

The Alumni Office, an administrative office of the School, serves as a liaison between the School and alumni. The office coordinates services and activities of the alumni. An alumni Newsletter reports on news of alumni, the School, and alumni activities. An annual spring conference is sponsored by the Alumni Association. Focusing on a topic of professional interest to alumni and students, it is a popular

one-day program. The Alumni Association also sponsors a reception for new and returning students each fall, an annual dinner-dance, and career development activities for students and alumni.

OTHER SERVICES AND FACILITIES

All students enrolled in the School are entitled to the privileges and facilities of the Morningside campus at Broadway and 116th Street as well as to those of the Health Sciences campus. For examples, the International Student Office, 208 Lewisohn, on the Morningside campus provides information about international student clubs at Columbia and about opportunities to attend the conferences, travel, and participate in community and cultural activities. Earl Hall Center, also on the main campus, serves as a forum for religious and other programs for both American and International students. Metro International, a coalition of area International student advisers, makes arrangements for International students to visit American families; it also organizes intercultural seminars and community-action programs and serves as an informal meeting place for both International and American students. Contact 203 Earl Hall (telephone 280-3574) for information about the University's affiliation.

The staff of the International Student Office provides advice and counseling to International students on such matters as housing, personal and financial problems, and regulations of the United States Immigration and Naturalization Service (visas, extensions of stay, work permission, temporary departure from the United States, transfer from Columbia to another school, termination of study).

The International Student Office provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

Financial Aid

GENERAL INFORMATION

Applicants for *any type of financial assistance* must provide the School with verification of their financial status by completing the Graduate and Professional School Financial Aid Service (GAPSFAS) application. This form can be obtained by writing to GAPSFAS, CN6660 Princeton, N.J. 08541-6660. The completed form should be returned to GAPSFAS. GAPSFAS will provide the School with an analysis of the information supplied on the form.

Applicants requesting financial aid should submit this application to GAPSFAS by April 15 so that the form is on file at the School no later than June 1. In order to be considered for a traineeship and/or have a loan processed, this form must be on file. *Applicants are advised not to wait until they have been admitted to the School to process this application.* Applicants who require assistance in completing this form should consult the Financial Aid Office.

In computing a student's need, the School uses the Schedule of Maximum Allowable Expenses established by the University to provide a student with a modest, but adequate, standard of living. These guidelines along with the information supplied on the GAPSFAS form make it possible for the School to assess and verify a student's financial need.

An applicant requesting financial aid is expected to apply for a guaranteed student loan up to the maximum set by the state or the amount which can be certified by the School. This requirement enables the School to increase the number of traineeships awarded to qualified students.

Applicants enrolled in a joint degree program must be registered in the School of Public Health in order

to be eligible for financial aid from the School.

Citizens of foreign countries, except those with Permanent Resident status, are not eligible for the traineeship and loan programs administered by the School and are advised to seek financial aid through their country of citizenship, private foundations, and international agencies.

Certain of the School's academic programs also administer their own financial aid funds. Inquiries regarding the availability of such funds should be directed to the directors of the respective training programs.

TRAINEESHIP PROGRAMS

The School of Public Health cooperates with the U.S. Public Health Service in offering Public Health Traineeships to persons from a variety of professional backgrounds who wish to enter either general or specific areas of professional interest in the field of public health. A traineeship is an award based on need, which will help to defray part of a student's educational expenses. The recipient of a traineeship is not required to perform services for the School. To be eligible for an award a student must be matriculated full time (at least 15 points) or part time (at least 6 points) in a degree program.

Traineeship awards for the autumn term are made in August.

COLUMBIA UNIVERSITY FELLOWSHIPS

Certain students in the School of Public Health are eligible to enter University competition for the fol-

lowing Columbia University fellowships:

WESTMORELAND DAVIS FELLOWSHIPS
Awarded to men from Virginia.

GEORGE W. ELLIS FELLOWSHIP

Open to graduate students who are residents of the State of Vermont or who have been graduated from a Vermont college or university.

LETA STETTER HOLLINGWORTH FELLOWSHIP

Awarded annually to women who are graduates of the University of Nebraska, with preference given to those who were born in Nebraska or received their early education there.

LYDIA C. ROBERTS GRADUATE FELLOWSHIPS

Open to persons born in Iowa who have been graduated from an Iowa college or university.

CLIFFORD AND SIEGRIED UPTON SCHOLARSHIPS

Awarded annually to children of employees of D. C. Heath and Company of Lexington, Massachusetts.

The deadline for filing for these fellowships is February 15. A student must have been admitted to the School or have a completed application for admission on file by this date. Students eligible to compete should contact the Financial Aid Office.

INTERNATIONAL FELLOWS PROGRAM

Master's and doctoral candidates with a major interest in international public health are eligible for appointment as International Fellows. The program is open to men and women who have been admitted to graduate degree programs in the University, and who have a sincere interest in using their graduate training in the field of international affairs. For further in-

formation about the program and for application forms, students should write to International Fellows Program, Columbia University, 1420 International Affairs Building, New York, N.Y. 10027.

FEDERAL LOAN PROGRAMS

Guaranteed Student Loan (GSL) Program

Commonly referred to as the "state loan" program, the Guaranteed Student Loan (GSL) is a federally insured, federally subsidized loan obtained through a bank, savings and loan associations, credit union, or other participating lender and is usually administered by a state guarantee agency. The maximum amount a student may borrow for an academic year is \$7,500. Repayment of interest and principal is usually deferred until after the student ceases at least half-time registration. Applications are available from participating lenders. Eligibility for a GSL is limited to U.S. citizens and permanent residents who are degree candidates maintaining satisfactory academic progress, enrolled at least as a half-time student, and is based on an analysis of financial need. In order to determine financial need, submission of a financial statement to the Graduate and Professional School Financial Aid Service (GAPSFAS) is required. The GAPSFAS form may be obtained by writing to GAPSFAS, Box 2614, Princeton, New Jersey 08540. Federal regulations require that certain information concerning the student's financial status be verified by the financial aid office. Therefore, each applicant is also required to submit a copy of his or her most recent federal income tax return (parents' return is also required if the student meets federal criteria for dependence) to the Office of Student Services. Complete current information concerning eligibility requirements,

borrowing limits, and conditions of repayment may be obtained from the Office of Student Services, 617 West 168 Street.

Supplemental Loans for Students (SLS) (formerly ALAS)

Supplemental Loans for Students (SLS) are available to graduate students who are U.S. citizens or permanent residents, through a participating lender (bank, savings and loan, credit union). The SLS is a federally insured loan available for those who cannot demonstrate financial need according to GSL criteria or who need to borrow funds in addition to a GSL. Repayment of the SLS principal is deferred while the student is enrolled full time but interest payments must begin immediately. When combined with other resources, the SLS may not exceed the cost of attendance minus all other aid. Complete current information concerning eligibility requirements, borrowing limits, and conditions of repayment may be obtained from the Office of Student Services, 617 West 168 Street.

Perkins Loan Program (formerly NDSL)

The Perkins Loan Program, institutionally administered federal funds, is available to U.S. citizens and permanent residents who are degree candidates maintaining satisfactory academic progress, enrolled at least as a half-time student and who demonstrate need that exceeds the GSL. Federal regulations mandate that priority for Perkins Loans be assigned to students who show exceptional need, as determined by a federally approved need analysis. For this purpose, the GAPS FAS form and copies of income tax returns (see GSL above) must be submitted. Repayment of interest and principal is deferred while the student is registered

at least half-time. Complete current information concerning eligibility requirements, borrowing limits, and conditions of repayment may be obtained from the Office of Student Services, 617 West 168 Street.

WORK-STUDY PROGRAM

Students who are interested in working part time should consult the Financial Aid Office about the Work Study Program. Eligibility for the program is based on financial need as determined by the Financial Aid Office (see GSL above). Through federal funds allocated for this program and administered by the University, students with a demonstrated financial need, United States citizens or permanent residents may choose from a variety of positions to help defray their cost of education. Students who will begin graduate work during the regular academic year may hold work-study positions during the summer prior to their first registration.

Part-time jobs are available to students who do not qualify for work study. Information on part-time employment may be obtained at the Office of Student Services in the School of Public Health.

NEW YORK STATE TUITION ASSISTANCE PROGRAM (TAP)

Any student who is a legal resident of New York State and will be a full-time degree candidate is entitled to apply for a TAP award. The amount of the award will be determined by the New York State Higher Education Services Corporation. The amount of this award is based upon the net taxable balance of the student's income and the income of those responsible for his or her support, as reported on the New York State income tax return for the previous calendar year. *For purposes of assessing financial need, the*

School will assume that all eligible students have applied for a TAP award.

Application forms and further information can be obtained from the New York State Higher Education Services Corporation, Empire State Plaza, Tower Building, Albany, N.Y. 12255. Columbia University's code #5488 should be used when completing the application. Applications for awards should be filed three months in advance of the beginning of the term for which the grant is to apply. To keep a student's records as comprehensive as possible, the Financial Aid Office should be notified when an award notice is received.

ASSISTANTSHIPS

Teaching assistantships are available to selected students who have completed at least one year of relevant graduate course work. Assistants divide their time between their studies and various tasks, helping faculty members in instruction, grading, and/or course administration.

Graduate research assistantships are also available on a selective basis to candidates for the Dr. P.H. or Ph.D. degrees.

Students should consult the head of the division in which they will do their major work prior to registration for information on assistantships.

VETERANS BENEFITS

A veteran of the armed forces who has served on active duty for at least 180 days and received an honorable discharge is eligible for veterans benefits. For further information consult the regional Veterans Administration Office.

Resources for Study

The School of Public Health carries responsibility for the nature and quality of its educational programs, and for assuring the adequacy of resources to meet diversified educational needs. Public Health students spend a high proportion of their study time at the School of Public Health using the School's facilities. However, increasingly, collaborative relationships with other units of the University and with outside agencies and institutions are developing, and students have many opportunities to explore wider areas of public health concern from different viewpoints. The following paragraphs indicate how some of these extramural resources currently contribute in a major way to the School's programs.

AFFILIATED CENTERS

The Columbia-Presbyterian Medical Center

The Medical Center was opened in the spring of 1928, seven years after the establishment of a permanent affiliation between Columbia University and the Presbyterian Hospital. It consists of the following units: the divisions and institutes of the Columbia University Faculty of Medicine (the College of Physicians and Surgeons, the School of Nursing, the School of Public Health, the Centers for Community Health, the Institute of Human Nutrition, International Institute for the Study of Human Reproduction); the Columbia University School of Dental and Oral Surgery; the Presbyterian Hospital and its subdivisions; the New York State Psychiatric Institute; and the Upper West Side Health Center.

The Medical Center occupies a plot of land given to Columbia University and the Presbyterian Hospital

by Mrs. Stephen V. Harkness and Mr. Edward S. Harkness. It comprises about twenty acres, extending from West 165th Street to West 168th Street and from Broadway to Riverside Drive, and is readily accessible from all parts of the city.

A large number and variety of educational programs use the combined resources of the Medical Center and its affiliated hospitals (Presbyterian Hospital, Harlem Hospital Center, St. Luke's-Roosevelt Hospital Center, Overlook Hospital, Helen Hayes Hospital, and Mary Imogene Bassett Hospital). The College of Physicians and Surgeons, concerned primarily with medical education, occupies a central position in the Medical Center. Its seventeen floors of teaching laboratories and classrooms connect with the wards and ambulatory services of the Presbyterian Hospital and with the research laboratories of the William Black Medical Research Building. The School of Public Health shares in the use of these and other Health Sciences facilities.

Augustus C. Long Health Sciences Library

The Columbia University Health Sciences Library is housed in the Julius and Armand Hammer Health Sciences Center, 701 West 168th Street. The four floors occupied by the library offer a comfortable atmosphere conducive to study, including such amenities as individual study carrels, group study and conference rooms, typing rooms, and a leisure reading lounge.

With more than 400,000 volumes and a staff of 48, the Health Sciences Library is one of the largest medical center libraries in the United States. It is well able to serve the needs of

faculty, students, and researchers in the health sciences disciplines. More than 3,400 periodicals are received regularly. The library includes a comprehensive media center equipped with audiovisual materials and equipment, a microcomputer room, and a significant rare book and special collections section. The library offers a wide array of information services, including computerized literature searching, individual consultation on research topics, and instruction on the use of information resources. Materials describing library services are available on request.

Other Columbia libraries, located on the Morningside campus, are open to all students and faculty who carry Columbia identification cards. The main collection is housed in Butler Library; special and departmental collections are housed in other buildings on the campus. Columbia students and faculty are also permitted access to the collections of approximately twenty-five other research institutions including Stanford and Yale Universities, under the auspices of the Research Libraries Group. Information about the Research Libraries Group can be obtained from the Health Sciences Library.

Comprehensive Cancer Center and Institute of Cancer Research

The Cancer Research Center was established in 1973. In 1979 the Center was awarded Comprehensive status by the National Cancer Institute in recognition of its broad responsibility for research, patient care, and cancer control activities. The Center coordinates, integrates, and facilitates cancer research, education, and patient care in the Health Sciences Faculties of Columbia University and its affiliated hospitals in New York City—Presbyterian, St. Luke's—Roosevelt, Harlem—as well as Overlook in Summit, New Jersey, and Morris-

town Memorial Hospital in New Jersey. The Cancer Center was organized to effect the efficient and cooperative use of all Center resources, maximize the dissemination of information among Center personnel, stimulate basic cancer research, and facilitate the rapid translation of cancer research findings into programs for improving capabilities for the prevention of cancer and the diagnosis, treatment, and care of patients with cancer.

The Institute of Cancer Research of Columbia University College of Physicians and Surgeons was established in 1911 with funds bequeathed to the University by George Crocker. It moved from its original quarters of 116th Street to the campus of the Columbia-Presbyterian Medical Center in 1938.

The Comprehensive Cancer Center and the Institute of Cancer Research are mutually involved in a clinical and basic research cancer effort, although their administrations function autonomously.

Center for Geriatrics and Gerontology

The Center was established and funded by the Faculty of Medicine and the New York State Office of Mental Health and is a rich resource for teaching and research in geriatrics and gerontology in a group of medical as well as long-term care facilities and in community settings. The components of the Center comprise an independent entity in the Faculty of Medicine, a Division in the School of Public Health, and a Department in the New York State Psychiatric Institute. The Center was designated by the Administration on Aging as a long-term care gerontology center for HHS region II. The Center has forged development of models for an alliance between the University and the community providers of care for

the development of services to the elderly. Its major focus is cross-national research and the care of the elderly.

Howard Hughes Medical Institute Program in Molecular Neurobiology

The program is the only one of the ten Hughes Medical Institute Programs in the country to be devoted to the neurosciences. Its establishment in 1984 made possible the scientific integration of the College's widely acclaimed research efforts in the neurobiology of learning and critical areas of molecular genetics. In addition to established investigators in these fields, the Center personnel include postdoctoral fellows, staff scientists, junior faculty, and support staff.

Center for the Study of Society and Medicine

The Center was established in 1982 to enrich the teaching and practice of medicine with the conceptual and policy insights of the social sciences and humanities. Its collaborative effort provides a unique opportunity for scholars trained in sociology, law, history, social work, philosophy, and economics to work together with medical clinicians and researchers. Principal members of the Center faculty have appointments in the Department of Medicine, which enables them to offer instructional programs taught jointly by clinicians, social scientists, and humanists. Center faculty teams teach a required course for second-year medical students on the social forces shaping contemporary medical practice, conduct seminars for medical house staff, participate in daily hospital rounds, and lecture at Columbia-affiliated institutions.

Center for Clinical Research

The Center for Clinical Research is a resource for the purpose of stimulating multidisciplinary, intensive investigation of human disease. It includes a fourteen-bed Adult Unit, a four-bed Pediatric Unit, a Metabolic Diet Kitchen, an Outpatient Unit, a Core Laboratory, and a Computer Facility. The Center is designed so that acutely ill, as well as ambulatory patients, can be studied. Use of the Center is open to qualified faculty members of the clinical and basic science departments of the College of Physicians and Surgeons upon approval of the Advisory Committee. Although the primary purpose of the facility is concerned with research, it also provides unusual opportunities for undergraduate and postgraduate training in clinical investigation.

In the Adult Unit major research activities include bone and mineral metabolism, cardiac electrophysiology and pharmacology, cardiovascular pathophysiology, cardiac transplantation, endocrinology/endocrine transplantation, epidemiology, extracorporeal photochemotherapy, hypertension, immunology/rheumatology, lipid and lipoprotein metabolism, movement disorders, neuromuscular diseases, pharmacokinetics and antibiotics, porphyria, psychiatry, reproductive biology, secretory diarrhea, and thrombosis.

In the Pediatric Unit major research activities include hemolytic anemias, infant nutrition, lead poisoning, perinatology, and total parenteral nutrition.

Gertrude H. Sergievsky Center

The Sergievsky Center is a center for research in the epidemiology of epilepsy, cerebral palsy, and developmental brain disorders. The Center has a core scientific faculty concerned with the development of research in the epidemiology of those diseases.

Funded with an endowment, it participates in the teaching programs of the Epidemiology Division of the School of Public Health and the Departments of Neurology and Pediatrics and provides a major resource in epidemiology research and training in neuroepidemiology.

Institute of Human Nutrition

The Institute of Human Nutrition is an interdisciplinary unit whose mission is to study all aspects of nutrition that relate to human health. The Institute is organized into three primary divisions: Growth and Development, Nutrition and Metabolism, and Community Nutrition. Although each division conducts its own research program and offers its own program of instruction, these are highly integrated in order to achieve two basic goals: research in all areas of human nutrition and an integrated teaching program in areas of nutrition relevant to the physician and medical scientist.

To achieve this integration of purpose and at the same time allow for the specialization necessary for the best research and teaching, combined research projects between the divisions are under way, and joint seminars and courses involving faculty and students in all three divisions are conducted. Constant interchange of ideas is fostered through weekly combined staff conferences and special lectures which are open to the medical center community. Through its Master of Science, Doctor of Philosophy, and postdoctoral programs, the Institute aims to train individuals for scholarly activities in university and research centers that are in the forefront of the movement to advance nutrition as a health science.

The facilities of the Institute include laboratories in the William Black Medical Research Center, and the Obesity Center and Nutrition and

Metabolic Research Center at St. Luke's Hospital Center. The office of the Director and other administrative offices are located on the seventh floor of the Health Sciences Center.

International Institute for the Study of Human Reproduction

The International Institute for the Study of Human Reproduction was founded in 1965 by Dr. Howard C. Taylor and was made possible by a substantial grant from the Ford Foundation. The primary purpose of the founders was to foster research in the sciences relevant to the solution of the world population problem. In more recent years, the aims of the Institute have been interpreted more broadly to include teaching, research, and the provision of clinical and social services related to the reproductive health of men and women. The Institute now consists of three centers.

The Center for Reproductive Sciences is a multidisciplinary group of basic and clinical research scientists with a specific interest in the overlapping field of genetics and early development, particularly concerned with understanding the mechanisms which control normal germ cell development, normal genome expression, and their significance in the production of abnormal human offspring. The Center includes divisions of genetics of reproduction, molecular reproductive endocrinology, biochemistry of reproduction, male reproductive endocrinology, female reproductive endocrinology, and primate neuroendocrinology. Individual and collaborative research has been carried out in specific basic science areas. Among them are gene expression in early development, the regulation of pituitary/hypothalamus peptide hormone gene expression, biochemistry, ultrastructure, and genetics of mammalian germ cell production, fe-

male primate reproductive neuroendocrinology, the ontogeny of sexual differentiation in organotypic tissue culture systems of the rodent brain, CNS gonadotropin receptors, kinetics of GnRH metabolism, the role of trace elements in spermatogenesis, biochemical kinetics of spermatogenesis, and chemistry of sperm motility. Clinical activities in human male and female reproductive endocrinology and genetics are also well represented with emphasis on hormonal or genetic infertility, induction of ovulation, and therapy of male infertility.

The aims of the Center for Population and Family Health are more specifically relevant to the social consequences of human reproduction. The Center's community-oriented Reproductive Health Services for Women Unit, in cooperation with the division of ambulatory care of the Department of Obstetrics and Gynecology, provides care, with emphasis on services for adolescents, to the community surrounding the Columbia-Presbyterian Medical Center. The Center's International Research and Technical Assistance Unit works with a number of foreign governments and with private organizations toward improved basic health and family planning services for poor people in developing countries. The Social Sciences Research Unit conducts ongoing evaluations of the Center's domestic reproductive service programs and carries out a basic research program on the causes and consequences of adolescent fertility. Finally, as a division of the School of Public Health, the Center provides academic programs leading to the M.P.H. and Dr. P.H. degrees in the fields of population/family planning, maternal and child health, and public health nutrition.

A third unit has recently been added to the Institute: the Center for Male Reproduction. The Center consists of an interdisciplinary group of basic scientists and clinicians engaged

in the study and treatment of the diseases of the male reproductive system.

The offices of the Centers for Reproductive Sciences and for Male Reproduction are at 630 West 168th Street and the office for the Center for Population and Family Health is at 60 Haven Avenue, Floor B-3, New York, N.Y. 10032.

MORNINGSIDE CAMPUS

Graduate School of Arts and Sciences

The Graduate School of Arts and Sciences is made up of the nonprofessional areas of Social Sciences, Humanities, and Natural Sciences. In addition to offering graduate courses in a wide variety of health-related areas, open to students at the School of Public Health on an elective basis, the Graduate School collaborates with the School of Public Health in Ph.D. degree programs in biostatistics, epidemiology, and sociomedical sciences.

For further information consult the bulletin of the Graduate School of Arts and Sciences.

Teachers College

This graduate school of education, formally affiliated with the University, is situated on West 120th Street adjoining the Morningside campus. It prepares graduate students for professional service in education, through master's and doctoral programs. Selected courses in the fields of health education, nursing and nutrition education, and international studies are particularly suitable as electives for students in the School of Public Health. Collaborative activities with Teachers College greatly strengthen programs in health and

nursing and nutrition education for both schools.

For further information consult the bulletin of Teachers College.

Columbia Business School

Located in Uris Hall in the center of the Morningside campus, Columbia Business School gives students a liberal business education, with concentrations in accounting, business economics and public policy, management of organizations, and other areas of study. Through a collaborative arrangement, students at the School of Public Health may elect courses at the Business School. In addition, a special combined M.P.H./M.B.A. degree program has been designed to prepare individuals for administrative positions in health facilities, agencies, and institutions.

For further information consult the bulletin of Columbia Business School.

Graduate School of Architecture and Planning

This School includes architecture, architectural technology, and urban planning divisions, and the educational disciplines concentrated within each division deal in different ways with the problem of humanity and its environment. The School is located in Avery Hall. Students at the School of Public Health interested in health planning may elect courses at the Graduate School of Architecture and Planning. A joint master's degree program leads to both the M.P.H. degree and the degree of M.S. in urban planning.

For further information consult the bulletin of the Graduate School of Architecture and Planning.

School of Social Work

This School's affiliation with Columbia University dates back many decades. Located in McVickar Hall on West 113th Street, it provides the basic components of modern social work education and practice at master's and doctoral levels. Through cooperative arrangements public health students may elect courses in the School of Social work to fulfill public health master's degree requirements, and vice versa. A joint M.P.H./M.S. in social work degree program is coordinated and administered by both schools.

For further information on programs and courses, consult the bulletin of the School of Social Work.

School of Law

This School is in a modern structure on Amsterdam Avenue and 116th Street. Through cooperative arrangements eligible public health students may elect courses in such areas of law as administration, the environment, human rights, and poverty.

For further information, consult the bulletin of the School of Law.

School of International and Public Affairs

The School is located on the Morningside Campus at 117th Street and Amsterdam Avenue. Programs leading to the degrees of Master of International Affairs and Master of Public Administration are offered. Formal joint programs with the M.P.H. program have been instituted. For further information consult the bulletins of the School of International and Public Affairs.

AFFILIATED HOSPITALS

The Presbyterian Hospital in the City of New York

Founded in 1868, the Hospital joined with the Columbia College of Physicians and Surgeons to form the Columbia-Presbyterian Medical Center, which opened in 1928. Under the terms of the permanent alliance agreement with Columbia University, members of the hospital staff are appointed by the Board of Trustees of the hospital on nomination by the Trustees of the University. The Presbyterian Hospital has an overall capacity of 1,291 beds and 48 bassinets. A major modernization effort begun in 1984 is scheduled for completion in 1988.

The Hospital includes all of the individual units described below:

Presbyterian Hospital is the single largest hospital pavilion.

The New York Orthopaedic Hospital opened as a dispensary in 1866 largely because of the interest taken in the care of the crippled by Theodore Roosevelt, father of the president of the same name. The hospital was located in its own buildings at 420 East 59th Street until December 1950, when it was merged with the Presbyterian Hospital as its orthopedic service.

Squier Urological Clinic is the Urology Service of the Presbyterian Hospital.

Sloane Hospital for Women, currently the Hospital's obstetrics and gynecology unit, was built at West 59th Street and Amsterdam Avenue and presented to Columbia University by Mr. and Mrs. William D. Sloane in 1886. It now is part of the Presbyterian Hospital's new Center for Women and Children.

Harkness Pavilion, erected when the Medical Center was established in 1928, is available for the accommodation of private and semiprivate patients from various services.

Babies Hospital, founded in 1887, provides for general medical and surgical care of infants and children up to their late teens, and care for premature babies. It is not part of the Center for Women and Children.

Neurological Institute, one of the first nongovernmental hospitals in the country for the treatment of diseases of the nervous system, was founded in 1909. It moved from East 67th Street to the Medical Center in 1929. The Institute includes facilities added in 1960 for psychiatric patients. It comprises the Hospital's Neurology and Neurological Surgery Services.

The Edward S. Harkness Eye Institute, site of the Hospital's Ophthalmology Service, opened in 1933. It has complete facilities for the medical and surgical treatment of adults and children with diseases of the eye. On January 1, 1940, the work of the Herman Knapp Memorial Eye Hospital was taken over by the Institute.

Vanderbilt Clinic was presented to Columbia University by the Vanderbilt family in 1888 and is the outpatient department for the Presbyterian Hospital.

The Mary Imogene Bassett Hospital

The Mary Imogene Bassett Hospital in Cooperstown, New York, is a rural hospital combining the characteristics of a university medical center with a dedication to the delivery of both primary health services to the local community and highly specialized services to a large referral area. The hospital has 180 beds and a staff of specialists who are all salaried and full time. In 1983 there were 146,000 visits to the Outpatient Department and 6,250 admissions. The teaching program for house staff and students is a highly personalized one based on a team approach to medical care.

Members of the staff conduct biomedical research and are interested in models for the delivery of health care to the community. The library is unusually extensive for a hospital of this size, with over 22,000 volumes and about 600 subscribed journals. Since 1947 the hospital has had a formal affiliation with Columbia, and currently about 60 students from Columbia elect programs at the Mary Imogene Bassett Hospital.

Harlem Hospital Center

Harlem Hospital Center, founded in 1887, is a progressive acute general teaching hospital offering primary, secondary, and tertiary care for children and adults living in the Central Harlem area and environs. The main complex consists of seven buildings. Eleven strategically located satellites extend the hospital out into the community. Operating with 753 certified beds and managing over 450,000 annual clinic visits, the hospital functions as the primary health care provider for a catchment area of three and a half square miles. Since 1969, Columbia University has had an affiliation with the Harlem Hospital Center. The School of Public Health is cooperating in demonstration services, applied training, and public health research activities at the hospital center and surrounding community.

The Helen Hayes Hospital

The Helen Hayes Hospital at West Haverstraw, New York, founded in 1900, is an independent rehabilitation hospital with complete medical services, owned and operated by the state through the New York State Health Department. Since 1966 the hospital has had a formal affiliation with Columbia University. The medical specialties and allied health professionals are organized into disability

units that provide comprehensive care through an integrated team approach, providing unique educational opportunities for residents and allied health students. The hospital has over 800 admissions and 12,000 outpatient visits a year. In 1980 a new 206-bed hospital building was opened, work began on construction of new research quarters, and plans were completed for establishment of several major new research centers. The hospital's long-standing program of bioengineering research now becomes the Orthopedic Engineering and Research Center; to this will be added the Regional Bone Center, Regional Arthritis Center, and Neurology Center.

Morristown Memorial Hospital

Morristown Memorial Hospital in New Jersey is a regional hospital center offering comprehensive health services for the entire family. It is a voluntary, nonprofit institution with a history of community service dating back to 1892. The hospital has become a central health care facility serving Morris, Warren, Sussex, and Somerset counties, and a medical referral center for all of northwest New Jersey. Morristown Memorial is also a teaching hospital, with programs for medical, nursing, and technical staff. With 689 beds, 1,800 employees, 550 nurses, a medical and dental staff of more than 550, and a full spectrum of basic and highly specialized services, Morristown Memorial combines the traditional advantages of a community hospital with the advanced capabilities of a progressive medical center. The hospital has two divisions: one where the emphasis is on acute care; the other, a center for preadmission testing, geriatric extended care, outpatient and alcoholic services, and planned facilities for subacute and rehabilitative care.

Overlook Hospital

Overlook Hospital in Summit, New Jersey, is a 551-bed suburban community hospital, founded in 1906, which became a teaching affiliate of the Columbia University in 1975. Overlook trains approximately 96 residents a year. It is a general, voluntary, nonprofit institution accommodating 25,000 inpatients and 100,000 outpatients each year. Overlook offers particularly strong training in family practice and primary care internal medicine and pediatrics through a program of broad-based clinical experience for graduate physicians. Outreach programs have been pioneered in alcoholism and other addictive illness, home-care and home-based hospice, and mobile intensive care utilizing paramedics. The hospital's Center for Community Health provides outpatient services including preadmission testing, ambulatory surgery and radiology, and a consumer health library. A construction/renovation project, which will increase the bed complement by 84, was initiated in 1983. Overlook maintains an open staff policy in regard to admissions to the medical staff, which at the present time numbers 550.

St. Luke's-Roosevelt Hospital Center

St. Luke's Hospital Center, which has included Woman's Hospital since 1953, merged with The Roosevelt Hospital in 1979, forming a Hospital Center containing 1,315 beds and serving a catchment area spanning Manhattan's west side from 34th to 134th Streets. Both hospitals had maintained teaching affiliations with the College of Physicians and Surgeons of Columbia University for many years before 1971, when they each became full University hospitals. The medical staff of the Hospital

Center numbers over 1,200; the house staff consists of approximately 400 fellows and residents.

ST. LUKE'S HOSPITAL CENTER DIVISION

St. Luke's was established in 1850 and has been on Morningside Heights next to the main Columbia campus since 1896. It merged with Woman's Hospital in 1953, and today the hospital complex contains 780 beds, including 63 pediatric beds, 58 obstetric beds, and 58 bassinets. Approximately 26,500 patients are admitted yearly to the four major and eleven specialty services.

St. Luke's is recognized as a leader in such fields as heart surgery, kidney transplantation, artificial kidney treatments, and noninvasive diagnosis (ultrasound). The Hospital Center's clinically oriented research projects are involved in such areas as blood diseases, coronary artery disease, gastroenterology, obesity and nutrition (it is the site of the only federally funded obesity research center), pulmonary disease, renal transplant-immunology, and bioengineering. A medical library of 32,000 volumes is an integral part of the Hospital Center. St. Luke's is both a major referral institution and a community hospital. The more than fifty specialty and subspecialty clinics see 50,000 patients yearly (totaling approximately 180,000 visits); the Emergency Room, a designated Trauma Center, is one of the busiest in Manhattan, with 77,000 visits annually. The Hospital Center also operates extensive community programs in alcoholism treatment, drug detoxification, and mental health.

ROOSEVELT HOSPITAL DIVISION

The Roosevelt Hospital treated its first patient in 1871. It contains 535 beds and bassinets. There are about 180,000 outpatient and emergency-

room visits annually. Approximately 19,000 patients are admitted to this hospital yearly. The hospital is engaged in many research and teaching activities. A new research building containing 52,000 square feet of laboratory space for all departments was opened in 1973. The medical library contains 26,000 volumes and subscribes to 540 medical and technical journals. The hospital is actively engaged in community programs, as represented by its Children and Youth Program and by its Drug Addiction and Alcoholism Programs and many other outreach and community services sponsored by the Departments of Pediatrics, Psychiatry, and Medicine, and the ambulatory care division. The hospital's new emergency room treats over 51,000 people yearly.

New York State Psychiatric Institute

The Institute is the oldest psychiatric research institute in the United States. It was built and is maintained by the New York State Office of Mental Health. Through a contractual arrangement, it is affiliated with the College of Physicians and Surgeons. The Institute's functions are to do research into the causes and treatment of psychiatric illness, to provide education for mental health professionals, and to provide the highest quality of clinical care for patients with psychiatric disorders. The Institute currently maintains sixteen major research laboratories, a hospital, and a wide variety of specialized outpatient departments which provide diagnostic and treatment programs. The Lawrence C. Kolb Research Annex, a thirteen-story facility dedicated to psychiatric research, was opened in the autumn of 1982.

DEPARTMENTS OF HEALTH

New York City Department of Health

In addition to the facilities provided through the Upper West Side District Health Center, the New York City Department of Health has traditionally made its vast public health activities available for study. The overall administration of the Department of Health and of its bureaus is so comprehensive and the diversity of services so broad that graduate students are provided with unique opportunities for observation of, and experience in, administrative problem solving in public health.

Upper West Side District Health Center

The Health Center administers the New York City Department of Health programs for the entire west-side community north of 59th Street, serving a population of 460,000. Clinics for diagnosis and treatment of tropical diseases, drug addiction, dental problems, tuberculosis, and for child health supervision and lead poisoning detection are located in the Center on the corner of 168th Street and Broadway. The Center is also responsible for venereal disease and child health satellite facilities.

The Health Center is available to students and staff of Columbia University who wish to study community health problems and programs and to participate in community health activities of concern to the population of the west side.

State and Local Departments of Health

The New York State Department of Health and the New Jersey Department of Health have been cooperative in making their facilities available to

graduate students, as have many other health departments, such as those of Westchester, Rockland, Nassau, and Suffolk counties. Experience in suburban and semirural communities provides opportunities to study and participate in well-organized health department and related voluntary and official agency programs.

NEW YORK CITY HEALTH AND HOSPITALS CORPORATION

The facilities of the municipal hospital system are used extensively for training and research. This system constitutes the largest and most comprehensive medical care system in the United States which is under one administration and in one location.

AFFILIATIONS LIST

Columbia University

College of Physicians and Surgeons
School of Dental and Oral Surgery
School of Nursing
Institute of Human Nutrition
International Institute for the Study of Human Reproduction
Center for Geriatrics and Gerontology
Center for Population and Family Health
Gertrude H. Sergievsky Center
Graduate School of Arts and Sciences
Teachers College
Columbia Business School
Graduate School of Architecture, Planning, and Preservation
School of Social Work
School of Law
School of International and Public Affairs

Other Agencies and Organizations

GOVERNMENT ORGANIZATIONS

Connecticut State Office for the Aging

Erie County (New York) Department of Senior Services
National Center for Health Research
National Center for Health Statistics
National Institute on Drug Abuse
New Jersey Department of Health
New York City Addiction Services Agency
New York City Department for the Aging
New York City Department of Mental Health and Mental Retardation Services
New York City Environmental Protection Administration
New York City Mayor's Office of Municipal Labor Relations
New York City Office of the Medical Examiner
New York State Association of Homes and Services for the Aging
New York State Department of Environmental Conservation
New York State Department of Mental Hygiene
New York State Institute for Basic Research in Mental Retardation
New York State Office for the Aging
United Nations
United States Department of Health and Human Services
United States Food and Drug Administration
United States National Institutes of Health
United States National Institute of Mental Health
United States Public Health Service
Westchester County (New York) Office for the Aging
World Health Organization

BUSINESS AND INDUSTRIAL ORGANIZATIONS

A.I. Dupont Institute, Wilmington
Anthony J. J. Rourke, Harrison, New York
Arthur Anderson & Co.
Blythe Eastman Dillon Health Care Funding, Inc., New York City
Building Service 328-J Health Fund
Coopers and Lybrand, New York City
Ernst & Whinney, New York City

Forest Laboratories (Marketing Research)
 Fred Hart Associates
 Haskin and Sells
 Jones Health Systems Management Inc.
 Loeb, Rhodes & Co., New York City
 Merck Sharpe & Dohme, Rahway, New Jersey
 Price-Waterhouse
 Touche, Ross & Co., New York City
 Westinghouse Health Systems, New York City

VOLUNTARY, SOCIAL, AND HEALTH AGENCIES

The Alan Guttmacher Institute
 American Foundation for the Blind
 American Public Health Association
 American Occupational Medicine Association
 ARC-Fort Washington Senior Center
 Associated Hospital Service of New York
 Blue Cross-Blue Shield of Greater New York
 Cancer Care
 Childrens Aid Society, New York City
 Chinatown Health Clinic
 Church Charity Foundation
 Citizens Committee for Children of New York City, Inc.
 Community Action for Legal Services
 The Community Health Center, Middletown, New York
 Community Health Program of Queens-Nassau
 Comprehensive Health Planning, HEW
 Connecticut Community Care, Inc.
 Council on the Environment of the City of New York
 The Door—A Center for Alternatives
 Family Planning International Assistance
 Federation of Protestant Welfare Agencies
 The Ford Foundation
 Fort Washington Houses and Senior Center
 Foundation for Child Development
 Georgetown University Community Health Plan, Inc.

Greater New York Hospital Association
 Group Health Insurance
 Health Insurance Plan of Greater New York
 Health Systems Agency of New York City
 ICD Day Care Program for Alzheimer's Patients
 International Planned Parenthood Federation
 Isabella Geriatric Center
 Jessie Smith Noyes Foundation, Inc., New York City
 Jewish Association of Services for the Aged (JASA)
 Jewish Institution for Geriatric Care
 Kaiser Permanente, Redwood City
 Kingsbridge Heights Geriatric Center
 Kingsbridge Heights Lombardi Bill Home Care Program
 The Lighthouse—New York State Association for the Blind
 March of Dimes
 Margaret Sanger Planned Parenthood Center
 Martin Luther King Health Center, Bronx
 Mid West Side Health Service Program, New York City
 Morris Heights Health Center
 National Council of Organizations for Children and Youth
 National League for Nursing, New York City
 New York Academy of Medicine
 New York Academy of Sciences
 New York Service Program for Older People, Inc. (SPOP)
 Ossining Open Door Health Center, New York
 Planned Parenthood Federation of American
 Planned Parenthood of Metropolitan Washington, D.C.
 Planning Associates
 The Population Council
 Red Cross
 Riverdale Senior Services, Inc.
 Riverside Church Health Action Center
 The Rockefeller Foundation
 St. John's Guild, Floating Hospital
 Self-help Community Services

Society for the Prevention of Cruelty
to Children
UNICEF
United Nations Fund for Population
Activities
United Hospital
Visiting Nurse Service of New York
Volunteer Services for the Elderly of
Yorkville, Inc.

CLINICS, HOSPITALS, AND SCHOOLS

Albany Medical Center, New York
Albert Einstein College of Medicine,
Bronx
Albert Einstein Medical Center,
Philadelphia, Pennsylvania
Baptist Christian Hospital, APS,
India
Barnert Memorial Hospital Center,
Paterson, New Jersey
Beekman Downtown Hospital
Bellevue Hospital
Beth Abraham Hospital, Bronx
Beth Israel Hospital, Boston,
Massachusetts
Beth Israel Medical Center
Blythedale Children's Center,
Valhalla, New York
Booth Memorial Medical Center
Boston City Hospital (Health and
Hospitals Corp.)
Bronx Lebanon Hospital
Bronx Municipal Hospital Center
Brookdale Hospital Center
The Brooklyn Hospital
Burke Rehabilitation Center
Carbini Medical Center, New York
City
Catholic Medical Center for
Brooklyn & Queens
Cedars-Sinai Medical Center, Los
Angeles
Champa Christian Hospital, Champa,
India
Children's Hospital
City College of New York
City Hospital at Elmhurst
Coler Memorial
College Hospital, Newark
Curran Lutheran Hospital, Zorzor,
Liberia, West Africa
Eastern Women's Center
ELWA Hospital, Liberia, West Africa
Fordham Hospital

Frontier Nursing Service, Hyden,
Kentucky
Good Samaritan Hospital Grasslands
Hospital
Gouverneur Hospital, New York City
Hackensack Hospital, New Jersey
Harlem Hospital Center
Hebrew University, Jerusalem, Israel
Hospital for Joint Diseases and
Medical Center
Hospital of the University of
Pennsylvania, Philadelphia
Hunter College
Jersey Shore Medical Center,
Neptune
Jewish Home & Hospital for Aged
Jewish Home for the Elderly of
Fairfield County (Conn.)
The Jewish Hospital and Medical
Center of Brooklyn Nursing Home
The Jewish Institute for Geriatric
Care
John F. Kennedy Medical Center,
Edison, New Jersey
The Johns Hopkins Hospital,
Baltimore, Maryland
Kijabe Medical Center, Kijabe, Kenya,
Africa
Kings County Hospital Center
LaGuardia Hospital
Lenox Hill Hospital
Long Island Jewish-Hillside Medical
Center, New Hyde Park, New York
Lutheran Medical Center, Brooklyn,
New York
Maimonides Medical Center,
Brooklyn, New York
Mary Hitchcock Memorial Hospital,
Hanover
Mary Imogene Bassett Hospital
Mary Washington Hospital,
Fredricksberg, Virginia
Mayo Clinic
Medical Center at Princeton,
Princeton, New Jersey
Memorial Sloan-Kettering Cancer
Center
Methodist Hospital of Brooklyn
Metropolitan Hospital Center
Metropolitan Hospital & Health
Center, Detroit
Mid-Maine Medical Center,
Waterville, Maine

- Middlesex General Hospital, New Brunswick, New Jersey
 Misericordia Hospital Medical Center
 Montefiore Hospital and Medical Center
 Morrisania City Hospital
 Morrisania Neighborhood Family Care Center, Bronx, New York
 Morristown Memorial Hospital, Morristown, New Jersey
 Mount Sinai Medical Center, Milwaukee, Wisconsin
 Mt. Vernon Hospital, Alexandria
 Nassau Hospital, Mineola, New York
 Neurological Institute
 Newark Beth Israel Medical Center, Newark
 New Rochelle Hospital Medical Center
 New York Hospital/Cornell Medical Center
 New York Infirmary
 New York State Psychiatric Institute
 New York University Center for Safety
 New York University Institute of Environmental Medicine
 New York University Medical Center
 North Central Bronx Hospital
 North Shore University Hospital
 Overlook Hospital, Summit
 Paine Whitney Psychiatric Clinic
 Peekskill Ambulatory Health Care Center, Peekskill
 Peninsula Hospital Center
 Pennsylvania Hospital, Philadelphia
 Phebe Hospital, Bong County, Liberia, West Africa
 Pontificia Universidad Javeriana, Colombia, South America
 PMI Strang Institute
 Presbyterian Hospital, New York, New York
 Presbyterian-University Hospital, Pittsburgh
 Public Health Service Hospital, New York
 Queens Hospital Center
 Rancocas Valley Hospital, Willingsboro
 Riverview Hospital, Red Bank
 Rockland Psychiatric Center, Orangeburg, New York
 Roosevelt Hospital
 Royal Victoria Hospital, Banjul, The Gambia, West Africa
 San Francisco City Hospital, San Francisco
 Sanus HMO
 Sloan Kettering Memorial Hospital
 Staten Island Hospital
 State University of New York, Stony Brook
 St. Clare's Hospital and Health Center
 St. John's Hospital and Medical Center
 St. John's Hospital and Memorial Center, Paterson
 St. John's Medical College, Bangalore, India
 St. Luke's Hospital, Bethlehem
 St. Luke's Roosevelt Hospital
 St. Vincent's Hospital Medical Center
 Thomas Jefferson University Hospital, Philadelphia
 Universidad de Costa Rica, Costa Rica, Central America
 University Hospital, Cairo, Alexandria
 University of California Medical Center, San Francisco
 University of Massachusetts Medical Center, Worcester
 U.S. Public Health Service
 Valley Hospital, Ridgewood
 Vellore Christian Medical College and Teaching Hospital, Tamil Nadu, India
 Veterans Administration Hospital, Bronx
 Veterans Administration Hospital, Brooklyn
 Veterans Administration Hospital, Manhattan
 VNA Norristown, PA
 Waltham Hospital, Massachusetts
 Wanless Hospital, Miraji Medical Center, Miraj Maharashtra, India
 Westchester County Medical Center
 Yale New Haven Medical Center, Connecticut

Academic Calendar: 1987-1988, 1988-1989

MAJOR RELIGIOUS HOLIDAYS

For a statement of University policy regarding religious holidays, see *Registration, Expenses, and Other Information—Regulations*.

Some of the major holidays occurring on weekdays are shown below. The Jewish holy days begin at sundown of the preceeding day.

1987-1988

Rosh Hashanah

Thursday, Friday, September 24, 25

Yom Kippur

Saturday, October 3

First days of Succoth

Thursday, Friday, October 8, 9

Concluding days of Succoth

Thursday, Friday, October 15, 16

Good Friday

Friday, April 1

First days of Passover

Saturday, Sunday, April 2, 3

Concluding days of Passover

Friday, Saturday, April 8, 9

Shavuoth

Sunday, Monday, May 22, 23

Id al Fitr

Not yet announced

Id al Adha

Not yet announced

1988-1989

Rosh Hashanah

Monday, Tuesday, September 12, 13

Yom Kippur

Wednesday, September 21

First days of Succoth

Monday, Tuesday, September 26, 27

Concluding days of Succoth

Monday, Tuesday, October 3, 4

Good Friday

Friday, March 24

First days of Passover

Thursday, Friday, April 20, 21

Concluding days of Passover

Wednesday, Thursday, April 26, 27

Shavuoth

Friday, June 9

Id al Fitr

Not yet announced

Id al Adha

Not yet announced

AUTUMN TERM 1987

July	31	Friday.* Last day to apply or reapply for October degrees (see September 8).
August	27-28	Thursday-Friday. Orientation.
September	1	Tuesday. Students meet with advisers.
	2-3	Wednesday-Thursday.† Registration for the autumn term.
	8	Tuesday. Classes begin.
	8	Tuesday. Last day to file <i>late</i> application or renewal of application for October degrees. Applications received after this date will automatically be applied to the next conferral date.
	16	Wednesday. Last day to drop courses with adjustment of fees. No adjustment of fees for individual courses dropped after this date.
October	19	Monday. Second quarter begins.
	28	Wednesday. Award of October degrees.
	30	Friday.* Last day to apply or reapply for January degrees (see December 4).

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

November	3	Tuesday. Election Day. Holiday.
	6	Friday. Last day to drop individual courses.
	26–29	Thursday–Sunday. Thanksgiving holidays.
December	4	Friday. Last day to file <i>late</i> application or renewal of application for January degrees. Applications received after this date will automatically be applied to the next conferral date.
	15	Tuesday. Last day of classes.
	16–23	Wednesday–Wednesday. Examination period.
	23	Wednesday. Autumn term (and second quarter) ends.
	24	Thursday, through January 19, 1988, Tuesday. Winter holidays.

SPRING TERM 1988

January	19	Tuesday. Students meet with advisers.
	20–21	Wednesday–Thursday.† Registration for the spring term.
	25	Monday. Classes begin.
	27	Wednesday. Award of January degrees.
February	3	Wednesday. Last day to drop courses with adjustment of fees. No adjustment of fees for individual courses dropped after this date.
	15	Monday. Washington's Birthday. NOT a School holiday.
	22	Monday.* Last day to apply or reapply for all May degrees (see April 4).

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

March	6	Sunday. Annual Commemoration Service in St. Paul's Chapel.
	13-20	Sunday-Sunday. Spring holidays.
	21	Monday. Fourth quarter begins.
	24	Thursday. Last day to drop individual courses.
April	4	Monday. Last day to file <i>late</i> application or renewal of application for May degrees. Applications received after this date will automatically be applied to the next conferral date.
May	6	Friday. Last day of classes.
	9-13	Monday-Friday. Examination period.
	13	Friday. Spring term (and fourth quarter) ends.

COMMENCEMENT

May	18	Wednesday. Conferring of degrees.
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SUMMER TERM 1988

May	25-26	Wednesday-Thursday, and May 31, Tuesday.* Registration, including payment of fees.
	30	Monday. Memorial Day. Holiday.
	31	Tuesday. First six-week session begins.
June	1-2	Wednesday-Thursday. Late registration for the first six-week session.
	3	Friday. Last day to drop first six-week session courses with adjustment of fees. No adjustment of fees for individual courses dropped after this date.

*Students allowed to register after the period specified must pay a late fee.

July	6, 7, 11	Wednesday, Thursday, and Monday.* Registration for the second six-week session.
	8	Friday. First six-week session ends.
	11	Monday. Second six-week session begins.
	15	Friday. Last day to drop courses with adjustment of fees. No adjustment of fees for individual courses dropped after this date.
	12-13	Tuesday-Wednesday. Late registration for the second six-week session.
August	1	Monday.† Last day to apply or reapply for October degrees (see September 8).
	19	Friday. Second six-week session (and Summer Session) ends.

AUTUMN TERM 1988

September	6	Tuesday. Orientation.
	7-8	Wednesday-Thursday.* Registration for the autumn term.
	8	Thursday. Classes begin.
	8	Thursday. Last day to file <i>late</i> application or renewal of application for October degrees. Applications received after this date will automatically be applied to the next conferral date.
	16	Friday. Last day to drop courses with adjustment of fees. No adjustment of fees for individual courses dropped after this date.
October	24	Monday. Second quarter begins.
	26	Wednesday. Award of October degrees.
	28	Friday.* Last day to apply or reapply for January degrees (see December 2).

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

November	8	Tuesday. Election Day. Holiday.
	11	Friday. Last day to drop individual courses.
	24-27	Thursday through Sunday. Thanksgiving holidays.
December	2	Friday. Last day to file <i>late</i> application or renewal of application for January degrees. Applications received after this date will automatically be applied to the next conferral date.
	16	Friday. Last day of classes.
	19-23	Monday-Friday. Examination period.
	23	Friday. Term ends.
	24	Saturday through January 17, 1989, Tuesday. Winter holidays.

SPRING TERM 1989

January	17	Tuesday. Students meet with advisers.
	18-19	Wednesday-Thursday.† Registration for the spring term.
	23	Monday. Classes begin.
	25	Wednesday. Award of January degrees.
February	1	Wednesday. Last day to drop term courses with adjustment of fees. No adjustment of fees for individual courses dropped after this date.
	20	Monday. Washington's Birthday. NOT a School holiday.
	21	Tuesday.* Last day to apply or reapply for all May degrees (see March 31).

†Students allowed to register after the period specified must pay a late fee.

*Students who apply after this date must pay a late fee.

March	5	Sunday. Annual Commemoration Service in St. Paul's Chapel.
	12-19	Sunday-Sunday. Spring holidays.
	20	Monday. Fourth quarter begins.
	23	Thursday. Last day to drop individual courses.
	31	Friday. Last day to file <i>late</i> application or renewal of application for May degrees. Applications received after this date will automatically be applied to the next conferral date.
May	5	Friday. Last day of classes.
	8-12	Monday-Friday. Examination period.
	12	Friday. Spring term (and fourth quarter) ends.

COMMENCEMENT

May	17	Wednesday. Conferring of degrees.
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Columbia University in the City of New York

SCHOOL OF PUBLIC HEALTH
FACULTY OF MEDICINE
600 West 168th Street
New York, N.Y. 10032

APPLICATION FOR ADMISSION

PERSONAL INFORMATION

1. Name _____ Social security number _____
(last) (first) (middle)
2. Address (indicate with an x where you wish correspondence sent).
☐ Permanent _____ Phone _____
 (street) (city) (state) (ZIP code) (day and evening)
☐ Temporary _____ Phone _____
 (street) (city) (state) (ZIP code) (day and evening)
 Until _____
3. Sex: ☐ Male _____ Age last birthday _____
☐ Female
4. Place of birth _____ Date of birth _____
5. Citizen of _____ Type of visa held _____

PROGRAM PREFERENCE (Degree, date, and program to which you are seeking admission)

6. Preferred date of enrollment _____
 (term) (year)
7. ☐ Full-time
☐ Part-time
8. Curriculum leading to degree of:
☐ Master of Public Health
☐ Master of Science
☐ Doctor of Public Health
9. Non-degree curriculum:
☐ Special student
10. Area(s) you wish to concentrate in. (If more than one, please give preference- 1st, 2nd, etc.)
- | | |
|---|--|
| ☐ General Public Health | ☐ Population-Family Health |
| ☐ Biostatistics | ☐ Sociomedical Sciences |
| ☐ Environmental Sciences | ☐ Tropical Medicine |
| ☐ Epidemiology | ☐ Maternal and Child Health |
| ☐ Health Administration | ☐ Occupational Medicine Residency |
| ☐ Geriatrics & Gerontology | ☐ Undecided |
| | ☐ Other (Specify) _____ |
11. If you are applying to a joint degree program, check appropriate box
- | | | |
|--|---|--|
| ☐ MPH/MBA | ☐ MPH/MS-Social Work | ☐ MPH/MIA |
| ☐ MPH/MS-Urban Planning | ☐ MPH/DDS | ☐ MPH/MPA |
| ☐ MPH/MS-Nursing | ☐ MPH/MD | ☐ MPH/MS-Occupational Therapy |

FOR OFFICE USE ONLY

Date/Action

12. List in reverse chronological order, college, university, graduate and professional schools you have attended. Transcripts should be sent directly to Admissions Office by the College or University.

Name of school	Location	Dates of attendance				Degree	Major	Grade point average
		From	To	Mo.	Yr.			

13. Academic honors _____
14. Professional licenses (include dates and states) _____
15. List standardized exams you did/will take and scores if known. Official scores should be sent directly to Admissions Office by Testing Service.

Exam	Date	Total Score	Verbal	Quantitative	Analytical
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

WORK EXPERIENCE

16. Please check below the range which best defines the amount of public health or related experience you will have had between your educational career and your anticipated enrollment at the Columbia University School of Public Health.

none	1 yr. or less	2-5 yrs.	5-10 yrs.	10 yrs. or more
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17. List work experience in reverse chronological order. (Attach additional sheets if necessary.) Attach c.v. or resume if available.

Check if Health-Related



Name & Address of Employer	Job Title & Description of Duties	Dates of Employment	Full-Time or Part-Time

REFERENCES

18. List the names of three (3) individuals with knowledge of your abilities in the areas of academic aptitude and achievement and/or in carrying out professional work and responsibilities. Recent academic and professional supervisors preferred. Please arrange to have these individuals send letters of reference. See instructions on recommendation form.

NAME AND TITLE	ADDRESS	PHONE NUMBER
_____	_____	_____
_____	_____	_____
_____	_____	_____

PERSONAL STATEMENT

19. Please attach a typewritten statement of no more than 400 words describing why you wish to enroll in the program, your interest in the area(s) of concentration specified, relationship of prior education and experience to public health, and career objectives.

APPLICATION FEE

20. Please enclose application fee of \$35.00.

COLUMBIA UNIVERSITY
SCHOOL OF PUBLIC HEALTH
600 West 168th Street
New York, N.Y. 10032

Letter of Recommendation

I. To the applicant:

This form is to be given to a person familiar with your academic, professional, or personal qualifications. (Please refer to the instructions for completing the application for admission on page 29 of the bulletin before designating your reference.)

Applicant _____
(Last Name) (First Name) (Middle Name)

Address _____

Under the Buckley Amendment, students at Columbia University are permitted to see their academic records under certain conditions. I hereby waive ☐ [retain ☐] the rights thus granted me to see this letter of recommendation should I become a student at the Columbia University School of Public Health.

Signature of Applicant _____ Date _____

II. To _____
(Applicant to fill in name of person providing reference)

The above-named person is applying for admission to the School of Public Health of Columbia University and has given your name as a reference. Would you please comment on the applicant's major strengths and weaknesses with regard to graduate study and a career in public health. If you have known the applicant as an employee of your organization, please include an evaluation of his or her job performance. Please supply any additional information which might help the Admissions Committee in considering the applicant and return this recommendation form to the applicant in an envelope with your signature across the seal. The applicant will then submit the sealed, signed envelope as part of the completed application to the School of Public Health.

Letter of Recommendation (*continued*)

Date _____

Signature _____

Position _____

Organization/College _____

Address _____

COLUMBIA UNIVERSITY
SCHOOL OF PUBLIC HEALTH
600 West 168th Street
New York, N.Y. 10032

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Letter of Recommendation (*continued*)

Date _____

Signature _____

Position _____

Organization/College _____

Address _____

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SCHOOL OF PUBLIC HEALTH
600 West 168th Street
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Date _____

Signature _____

Position _____

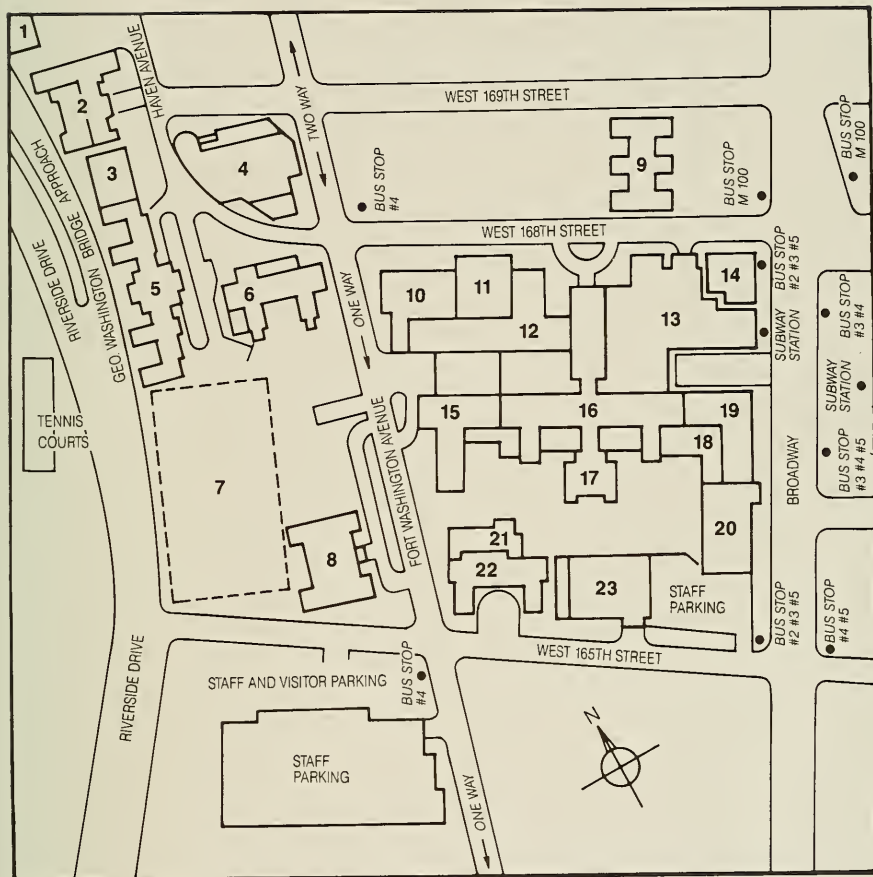
Organization/College _____

Address _____

Columbia-Presbyterian Medical Center
Columbia University
 HEALTH SCIENCES CAMPUS



0050075969



- | | | |
|---|--|--|
| 1. Bard Haven Apartments | 9. School of Nursing
(The Georgian) | 17. The Pauline A. Hartford
Memorial Chapel |
| 2. Bard Hall Medical Student
Residence | 10. William Black Medical
Research Building | 18. Radiotherapy Center |
| 3. The Lawrence C. Kolb
Research Building | 11. Alumni Auditorium | 19. Center for Women and
Children, North |
| 4. Augustus C. Long Library—
Armand Hammer Health
Sciences Center | 12. College of Physicians and
Surgeons | 20. Center for Women and
Children, South |
| 5. The New York State
Psychiatric Institute | 13. Vanderbilt Clinic | 21. Eye Institute Research
Laboratories |
| 6. The Neurological Institute
of New York | 14. School of Public Health | 22. The Edward S. Harkness
Eye Institute |
| 7. Site of New Hospital
Building | 15. The Harkness Pavilion | 23. Service Building |
| 8. The Dana W. Atchley
Pavilion | 16. The Presbyterian Hospital
New York Orthopedic
Hospital
Squier Urological Clinic | |

